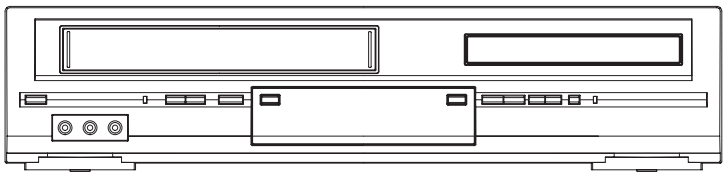
Memorex

CLASS 1
LASER PRODUCT

MVD4540D

SERVICE MANUAL

DVD VIDEO PLAYER & VHS VIDEO CASSETTE RECORDER

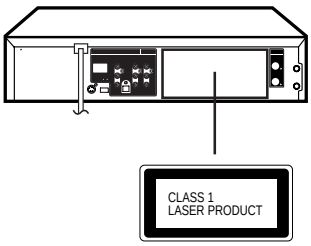


ORIGINAL
MFR'S VERSION A

IMPORTANT WARNING

CAUTION:
DVD PLAYER IS A CLASS 1 LASER PRODUCT. HOWEVER THIS PLAYER USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE PLAYER CORRECTLY AS INSTRUCTED.

THE FOLLOWING CAUTION LABEL IS LOCATED ON THE REAR PANEL OF THE PLAYER.



(Printed on the Rear Panel)

WHEN THIS PLAYER IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS PLAYER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

3. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

4. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)
1. MODEL NUMBER and VERSION LETTER.
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

WHEN REPLACING DVD DECK

[When the removal of the DVD Deck]

Before removing Pick Up PCB and DVD PCB connector, make the short circuit on the position as shown **Fig. 1** using a soldering. If you remove the DVD Deck with no soldering, the Laser may be damaged.

[When the installation of the DVD Deck]

Remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

NOTE

- Use the Pb Free solder and the exclusive soldering iron.
- Manual soldering conditions
  - Soldering temperature: 320 ± 20˚C
  - Soldering time: Within 3 seconds
  - Soldering combination: Sn-3.0Ag-0.5Cu
- When Soldering/Removing of solder, use the draw in equipment over the Pick Up Unit to prevent the Flux smoke from it.

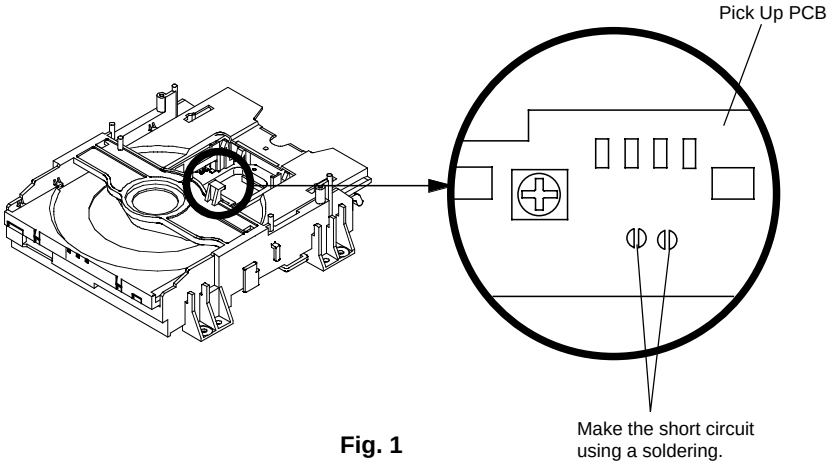


Fig. 1

PREPARATION OF SERVICING

The laser diode used for a pickup head may be destroyed with external static electricity. Moreover, even if it is operating normally after repair, when static electricity discharge is received at the time of repair, a life of product may become short.
Please perform the following measure against static electricity, be careful of destruction of a laser diode enough at the time of repair, and work.

- It works on the desk which performed measures against static electricity, such as conductive mat.
- Soldering iron with ground wire or ceramic type is used.
- A worker needs to use a ground conductive wrist strap for body.

TAPE REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Top Cabinet, Front Cabinet and DVD Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Remove the screw ① of the Deck Chassis and remove the Loading Motor. **(Refer to Fig. 2)**
3. Rotate the Pinch Roller Cam in the direction of the arrow by hand to slacken the Video Tape.
4. Rotate the Clutch Ass'y either of the derections to wind the Video Tape in the Cassette Case.
5. Repeat the above step 3~4. Then take out the Video Cassette from the Deck Chassis. Be careful not to scratch on the tape.

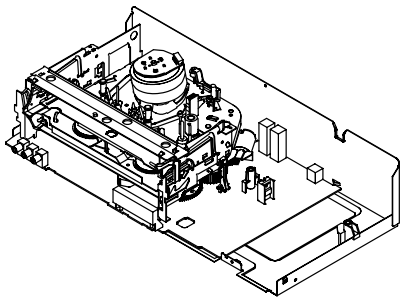


Fig. 1

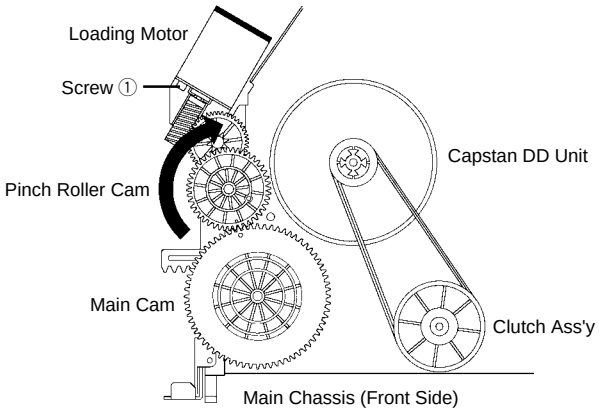


Fig. 2

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Back Cabinet and TV//DVD/VCR Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Rotate the Main Gear in the direction of the arrow by hand. **(Refer to Fig. 1)**
3. Draw the Tray.

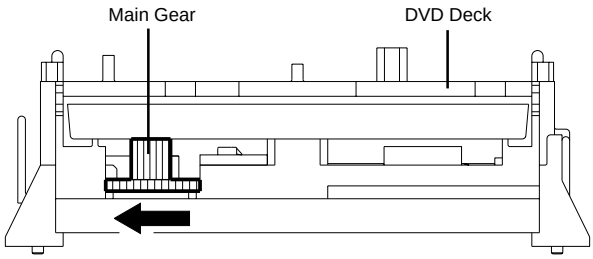


Fig. 1

PARENTAL CONTROL - RATING LEVEL

4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Turn Unit ON.
2. Press and hold the '7' key on the remote control unit.
3. Simultaneously press and hold the 'STOP' key on the front panel.
4. Hold both keys for more than 3 seconds.
5. The On Screen Display message 'PASSWORD CLEAR' will appear.
6. The 4 digit password has now been cleared

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GENERAL SPECIFICATIONS

G-1	Outline of the product				DVD VIDEO PLAYER & VHS Player / Recorder
G-2	DVD System	Color System			NTSC
		Disc			DVD, CD-DA, CD-R/RW
		Disc Diameter			120 mm , 80 mm
		Deck	Disc Loading System		Front Disc Loading
			Motor		3 Motors
		Pick up			1-Lens 2-Beams System
		Playback time (Max)	DVD 1-Layer		135min (4.7GB)
			DVD 2-Layer		245min (8.5GB)
			CD		74min
			VIDEO CD		--min
		Search speed			Fwd 4 steps
				Actual	2-45 times (DVD)
					4-40 times (CD)
					Rev 4 steps
				Actual	2-45 times (DVD)
					4-40 times (CD)
		Slow speed			Fwd 1/7-1/2 times
				Actual	--
					Rev --
				Actual	--
G-3	VCR System	System			VHS Player / Recorder
		Video System			NTSC
		Hi-Fi STEREO			Yes
		NTSC PB(PAL60Hz)			No
		Deck	DECK		OVD-7
			Loading System		Front
			Motor		3
		Heads	Video Head		4Head
			FM Audio Head		2Head
			Audio / Control		Mono/Yes
			Erase (Full Track Erase)		Yes
			Erase (Normal Audio Track Erase)		No
		Tape Speed	Rec PAL		-
			Rec NTSC		SP/SLP
			Play PAL		-
			Play NTSC		SP/LP/SLP
		Fast Forward / Rewind Time (Approx.) at 25oC			FF:4'50"/REW:2'30"
				with Cassette	T-120
		Forward/Reverse	NTSC or PAL-M		SP/LP/SLP = 3x,5x / 7x,9x / 9x,15x
		Picture Search	PAL or SECAM		-
		Frame Advance			Yes
		Slow Speed			1/10
G-4	Tuning System	Broadcasting System			US System M
		Tuner and Receive CH	System		1Tuner
			Destination		US (w/CATV)
			Tuning System		F-Synth
			Input Impedance		VHF/UHF 75 OHM
			CH Coverage		2-69,4A,A-5~ A-1,A~I, J~ W, W+1-W+84
		Intermediate Frequency	Picture (FP)		45.75 MHz
			Sound (FS)		41.25 MHz
			FP-FS		4.50 MHz
		Preset CH			-
		RF Converter Output			Yes
			Channel		3 or 4 ch
			Level / Impedance		66 dBu / 75 Ohm
			Sound Selector		No
		Stereo / Dual TV Sound			US-ST
		Tuner Sound Muting			Yes
G-5	Power	Power Source	AC		120V 60Hz
			DC		-
		Power Consumption			18 W at 120V 60Hz
			Stand by		2 W at 120V 60Hz
			Per Year		-- W
		Protector	Power Fuse		Yes
			Safety Circuit		Yes
			IC Protector(Micro Fuse)		No
G-6	Regulation		Safety		UL
			Radiation		FCC
			Laser		DHHS
G-7	Temperature		Operation		5°C - 40°C
			Storage		-20°C - 60°C
G-8	Operating Humidity				Less than 80% RH
G-9	Signal	Video Signal	Output Level		1 V p-p/75 ohm (DVD,VCR)

GENERAL SPECIFICATIONS

				S/N Ratio (Weighted)	65 dB(DVD) 50 dB(VCR)
				Horizontal Resolution	500 Lines (DVI 230 Lines(VCR Mode)
		RGB Signal		Output Level	-
		Audio Signal		Input Level Microphone	-
				Input Level Line	-8 dBm/ 50k ohm (VCR, 0dBm=0.775Vrms)
				Output Level Line	-8 dBm/ 1k ohm (VCR, 0dBm=0.775Vrms) -12dBm/ 1k ohm (DVD, -20dBFs 0dBFs=2.0Vrms)
				Digital Output Level	0.5 V p-p / 75 ohm(DVD)
				S/N Ratio at (Weighted)	90dB(DVD), 42dB(VCR at SP)
				Harmonic Distortion (1KHz) Typical	0.02% (1KHz) (DVD) , 1.5% (1KHz) (VCR)
				Frequency Response : DVD Mode at DVD	4 Hz - 22 KHz
				DVD Mode at VIDEO CD	-
				DVD Mode at CD	4 Hz - 20 KHz
				VCR Mode at SP	100Hz - 10 KHz
				VCR Mode at LP	-
				VCR Mode at SLP	100Hz - 4 KHz
		Hi-Fi Audio Signal		Dynamic Range : More than	90dB
				Frequency Response	20Hz ~20kHz
				Wow And Flutter : Less than	0.01 %Wrms
				Channel Separation : More than	60 dB
				Harmonic Distortion : Less than	0.01
G-10	**On Screen Display (DVD)**	Menu			Yes
			Menu Type		Character
			Language		Yes
				Menu	Yes
				Subtitle	Yes
				Audio	Yes
			Picture		Yes
				TV Screen Size	Yes
				OSD Display On/Off	Yes
				JPEG Interval	No
				Select Files	No
				E.B.L. (Enhanced Black Level)	No
			Sound		Yes
				DRC (Dynamic Range Control)	Yes
				Dialogue On:DRC(TV)/ Off:DRC(Std)	No
				dts Decode	No
				Output (5.1ch/2ch)	No
				Surround On/Off	No
				Center On/Off	No
				Sub Woofer On/Off	No
			Parental		Yes
				Password Lock/Unlock	Yes
				Rating Level	Yes
			Other		Yes
				OSD Language (Set up Language)	Yes
				Output (RGB / Composite)	No
			Open		Yes
			Close		Yes
			No disc		Yes
			Reading		Yes
			Play		Yes
			Still/Pause		Yes
			Stop		Yes
			Prohibit Mark		Yes
			Step		Yes
			Skip (>>|)		Yes
			Skip (|<<)		Yes
			Random		Yes (CD, MP3)
			Repeat		Yes
			Slow+		Yes
			Slow-		No
			Search+		Yes
			Search-		Yes
			Jump		Yes
			Resume		Yes
			Title No.		Yes
			Chapter No.		Yes
			Track No.		Yes
			Time		Yes
			Subtitle No.		Yes
			Angle No.		Yes
			Vocal On/Off		Yes
			Audio No.		Yes
			Audio Stereo L/R		No
			Zoom		Yes

GENERAL SPECIFICATIONS

			Marker No.			Yes
			Spatializer (N-2-2)			No
			Program Play Back			Yes (CD, MP3)
			MP3		Folder Name	Yes
					File Name	Yes
					File No	Yes
					Time	Yes
					Track No	Yes
			Progressive Scan Out ON/OFF			Yes
	On Screen Display(VCR)	Menu				Yes
			Menu Type			Character
			Timer Rec Set			Yes
			Auto Repeat On/Off			Yes
			SAP On/Off			Yes
			CH Set-Up			Yes
				TV/CABLE		Yes
				Auto CH Memory		Yes
				Add/Delete		Yes
			System Set Up			Yes
				Clock Set		Yes (Calendar 12H)
				Language		Yes
				No Noise Back Ground		Yes
				Auto Clock		Yes
				Standard Time		Yes
				Daylight Saving Time		Yes
		G-CODE(or SHOWVIEW or PLUSCODE)No. Entry				No
		Stereo, Audio Output, SAP				Yes
		Play/Stop/FF/Rew/Rec/OTR/Pause/Eject/Tape In/Repeat (Symbol Mark)				Yes
				CH/AV(LINE)		Yes
				Clock		Yes
				Repeat		Yes
				Tape Counter		Yes
				Index		Yes
				Tape Speed		Yes
				ATR / Manual Tracking		Yes
				ZERO Return		Yes
				Hi-Fi		Yes
G-11	**OSD Language**		DVD OSD			English / French / Spanish
			VCR OSD			English / French / Spanish
G-12	**Clock,Timer and Timer Back-up**	Calendar				1990/1/1 ~ 2081/12/31
		Timer Events				8 Program/ 1 Month
		One Touch Recording Max Time				6 Hours
		OTPB Valid Time				No
		Timer Back-up (at Power Off Mode)				30min
G-13	**Display**	DISPLAY				Yes
				DISPLAY type		LED Module (Green, "Rec" &Timer symbol = Red)
				Clock/Counter,CH,Timer Rec,OTR, Play Rec,FF(Cue),Rew(Rev),Stop,ATR,Eject		No
				VCR		Yes
				DVD		Yes
				CD		Yes
				Clock		Yes (12h)
					AM	No
					PM	Yes
				Counter	VCR	Yes (hour:min)
					DVD	Yes (hour:min)
					CD	Yes (min:sec)
				Eject		Yes
				Counter Remain		No
				Play		Yes
				Stop		No
				Rec		Yes
				FF / Cue		No
				REW / Review		No
				Pause / Still		Yes
				OTR (ITR)		No
				T-Rec		Yes
				Chapter		No
				TITLE		No
				TRACK		Yes
				Repeat		No
				Hi-Fi		No
				SP		No
				LP		No
				SLP		No
				CH		Yes

GENERAL SPECIFICATIONS

			RF Output CH	Yes
			Tape In	Yes
			Remocon Custom Code	No
			Progressive Scan Out	Yes
G-14	Remote Control	Unit		RC-JN
		Glow in Dark Remocon		No
		Format		NEC
		Custom Code		71-8E
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		46 Keys
		Keys	Power	Yes
			DISPLAY	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Input Select	No
			Input Select / PROGRESSIVE	Yes
			UP/CH+	Yes
			DOWN/CH-	Yes
			LEFT/ SET- / TRACKING-	Yes
			RIGHT/ SET+ / TRACKING+	Yes
			VCR/DVD	Yes
			TV/VCR	Yes
			DVD MENU	Yes
			TOP MENU	Yes
			SETUP MENU/VCR MENU	Yes
			ENTER	Yes
			CANCEL	Yes
			RETURN	Yes
			PLAY	Yes
			STOP	Yes
			PAUSE/STILL/STEP	Yes
			FF(Cue)/SEARCH+	Yes
			REW(Review)/SEARCH-	Yes
			REC/OTR	Yes
			SKIP+ / INDEX+	Yes
			SKIP- / INDEX-	Yes
			AUDIO / AUDIO SELECT	Yes
			ANGLE/COUNTER RESET	Yes
			SUBTITLE/ATR	Yes
			PLAY MODE/SPEED	Yes
			T-REC	Yes
			CLOCK / COUNTER	Yes
			JUMP/ZERO RETURN	Yes
			ZOOM	Yes
			REPEAT A-B	Yes
			SLOW (Forward)	Yes
			MARKER	Yes
			OPEN/CLOSE	Yes
			EJECT	Yes
G-15	Features (DVD)	Auto Power Off		No
		Parental Lock		Yes
		Video CD Playback		No
		MP3 Playback		Yes
		WMA Playback		No
		JPEG Playback		No
		Progressive Scan Out		Yes
		Digital Out	Dolby Digital	Yes
			MPEG	Yes
			PCM	Yes
			DTS	Yes
		Down Mix Out	(Dolby Digital)	Yes
			(DTS)	No
		Spatializer (N-2-2)		No
		Screen Saver		No
		Tray Lock		No
		Auto Stop		No
		Audio DAC		192kHz / 24bit
	Features	Auto Head Cleaning		Yes

GENERAL SPECIFICATIONS

	(VCR)	Auto Tracking			Yes
		HQ (VHS Standard High Quality)			Yes
		Auto Power On, Auto Play, Auto Rewind, Auto Eject			Yes
		Auto Power Off			No
		Forward/Reverse Picture Search			Yes
		VIDEO PLUS+ (SHOWVIEW, G-CODE)			No
		One Touch Playback			No
		Auto CH Memory			Yes
		AREA CODE			No
		Auto Clock Set			Yes
		Index Search			Yes
		SQPB			No
		CATV			Yes
		Energy Star			No
		MTS (SAP)			Yes
		CM Skip (30sec x 6 Times)			No
		Copy (Disc to Tape)			No
G-16	**Accessories**	Owner's Manual		Language	English / Spanish
				w/Guarantee Card	No
		Remote Control Unit			Yes
		Guarantee Card			Yes
		Registration Card			No
		Warning Sheet			No
		Service Station List			No
		Important Tag			No
		AC Plug Adapter			No
		Quick Set-up Sheet			No
		Battery			No
				UM size x pcs	--
		AC Cord			No
		AV Cord (1.2m)			Yes
		75 Ohm Coaxial Cable (0.9m)			Yes
		S-Video Cable			No
		21pin cable			No
		800 No Sticker			No
		Toll Free Insert Sheet			No
		Safety Tip			No
G-17	**Interface**	Switch	Front	Power	Yes
				Play	Yes
				Eject (VCR)	Yes
				Stop	Yes
				Rec/OTR	Yes
				Open/Close (DVD)	Yes
				CH +	Yes
				CH -	Yes
				FF/ Search(>>)	Yes
				Rew/Search(<<)	Yes
				Still/Pause	No
				Shuttle (Search/REV/FWD)	No
				DVD/VCR	Yes
				Main Power SW	No
			Rear	Attenuator	No
				S-Video/Component Video Selector	Yes
				RF Out (Slide SW)	No
				Main Power SW	No
		Volume		Phones Volume	No
				Mic Volume	No
				Echo Volume	No
				Rec/OTR	No
		Terminals	Front	Video In	RCA x1 (Yellow)
				Audio In	RCA x 2 (Stereo, White/Red)
			Rear	Video Output	RCA x1 (Yellow) S-Video x 1 (DVD Signal Only) Component x1 (RCA 3pin,DVD Signal Only)
				Audio Output	RCA x 4 (Stereo, White/Red) Coaxial x 1 (Digital Audio,DVD Signal Only)
				Optical Out (Option)	Yes (Digital Audio,DVD Signal Only)
				Video Input (Option)	No
				Audio Input (Option)	No
				RF Input / Output	Yes
				Euro Scart	No
				AC Inlet	No
		Indicator	LED	Power	No
				Rec	No
				T-Rec	No
				TV/VCR	No
				DVD	Yes (RED)

GENERAL SPECIFICATIONS

			VCR	Yes (RED)
			Surround	No
			Level Meter	No
G-18	**Set Size**		Approx. W x D x H (mm)	430 x 227 x 99
G-19	**Weight**		Net (Approx.)	3.5 kg(7.7lbs)
			Gross (Approx.)	4.5 kg(9.9lbs)
G-20	**Carton**	Master Carton		No
			Content	--- Sets
			Material	--- / ---
			Dimensions W x D x H(mm)	---
			Description of Origin	---
		Gift Box		Yes
			Material	Double / Brown
			W/Color Photo Label	No
			Dimensions W x D x H(mm)	497 x 340 x 180
			Design	As Per BUYER 's
			Description of Origin	Yes
		Drop Test		Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces
			Height (cm)	80 cm
		Container Stuffing		2,011 Sets/40' container
G-21	**Material**	Cabinet	Front	PS 94V2 or More / DECABROM
		PCB	Non-Halogen Demand	No
			Eyelet Demand	No
G-22	**Environment**	Pb Free	Pb-free Solder	No
			Other	No
		Cd Free		No

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: TOP CABINET, OPERATION PCB AND FRONT CABINET (Refer to Fig. 1-1)

1. Remove the 5 screws ①.
2. Remove the Top Cabinet in the direction of arrow (A).
3. Disconnect the following connector: (CP651).
4. Unlock the 9 supports ②.
5. Remove the Front Cabinet in the direction of arrow (B).
6. Remove the 2 screws ③.
7. Remove the Operation PCB in the direction of arrow (C).

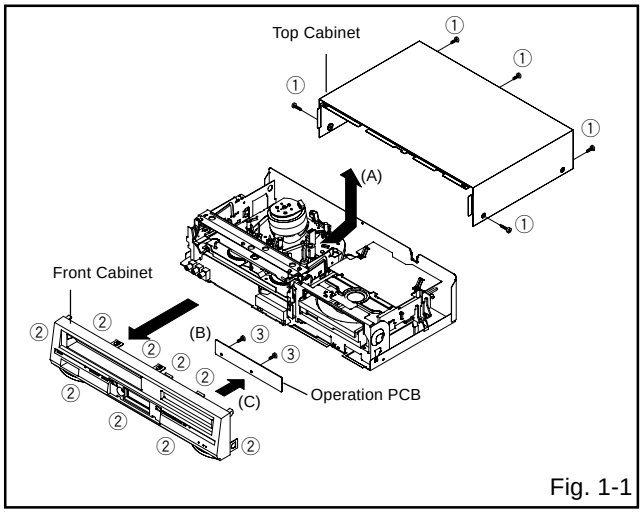


Fig. 1-1

1-2: FLAP (Refer to Fig. 1-2)

1. Open Flap to 90˚ and flex in direction of arrow (A), at the same time slide in direction of arrow (B).
2. Then lift in direction of arrow (C).

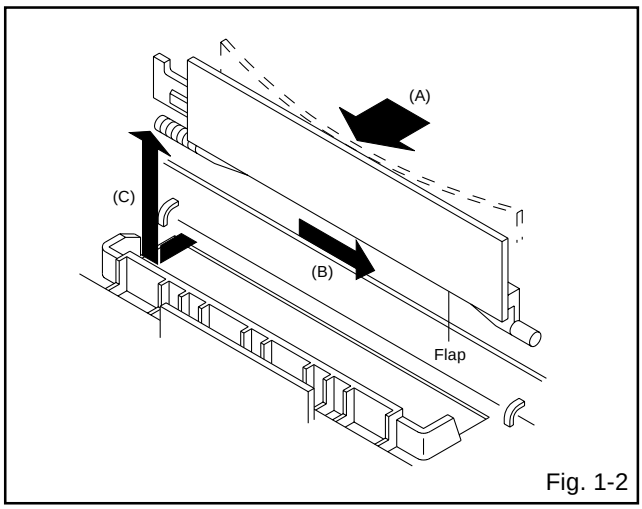


Fig. 1-2

1-3: DVD DECK/DVD PCB (Refer to Fig. 1-3)

1. Make the short circuit on the position as shown **Fig. 1-3** using a soldering. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Unlock the support ① and remove the Deck Top Holder in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Remove the 2 screws ③.
5. Disconnect the following connectors: (CP501, CP8001).
6. Remove the DVD Deck in the direction of arrow (B).
7. Disconnect the following connectors: (CP2601, CP2602 and CP2603).
8. Remove the 2 screws ④.
9. Remove the DVD PCB in the direction of arrow (C).
10. Remove the 3 screws ⑤.
11. Remove the Front Angle in the direction of arrow (D).

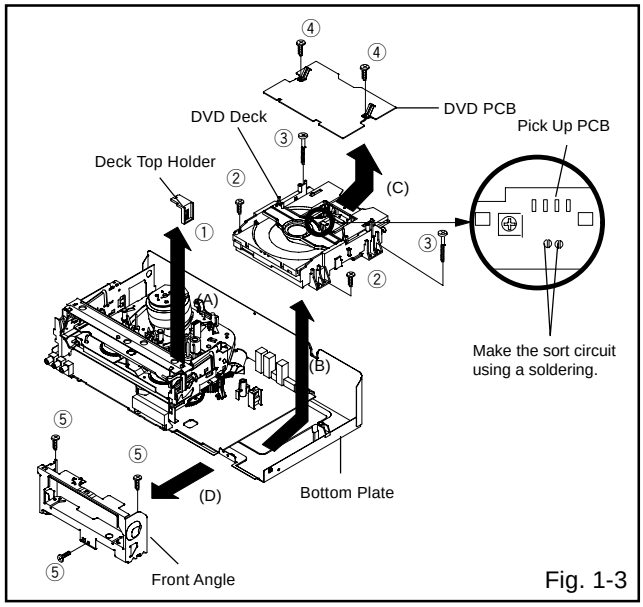


Fig. 1-3

NOTE

1. Use the Pb Free solder and the exclusive soldering iron.
2. Manual soldering conditions
   - Soldering temperature: 320 ± 20˚C
   - Soldering time: Within 3 seconds
   - Soldering combination: Sn-3.0Ag-0.5Cu
3. When Soldering/Removing of solder, use the draw in equipment over the Pick Up Unit to prevent the Flux smoke from it.
4. When the installation of the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and VCR PCB connector.

DISASSEMBLY INSTRUCTIONS

1-4: VCR DECK (Refer to Fig. 1-4)

NOTE

Do not remove the cable at the FE Head section. The FE Head may be damaged if you remove the cable by force.

1. Remove the screw ①.
2. Remove the FE Head.
3. Move the Cassette Holder Ass'y to the back side.
4. Remove the 2 screws ②.
5. Remove the 2 screws ③.
6. Disconnect the following connectors: (CP101, CP102 and CP3001).
7. Remove the VCR Deck in the direction of arrow.

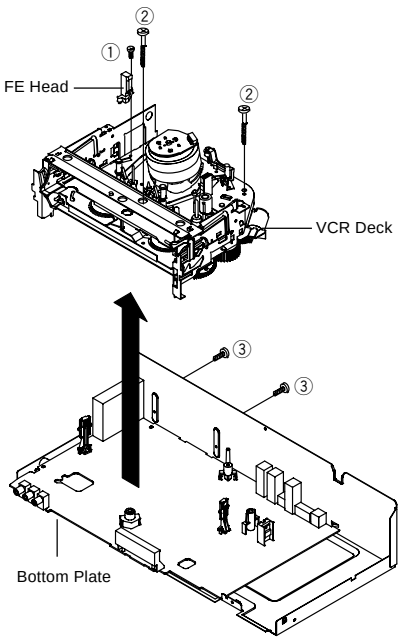


Fig. 1-4

1-5: VCR PCB (Refer to Fig. 1-5)

1. Remove the screw ①.
2. Remove the 5 screws ②.
3. Remove the 2 screws ③.
4. Remove the 3pin Shield.
5. Remove the VCR PCB in the direction of arrow.

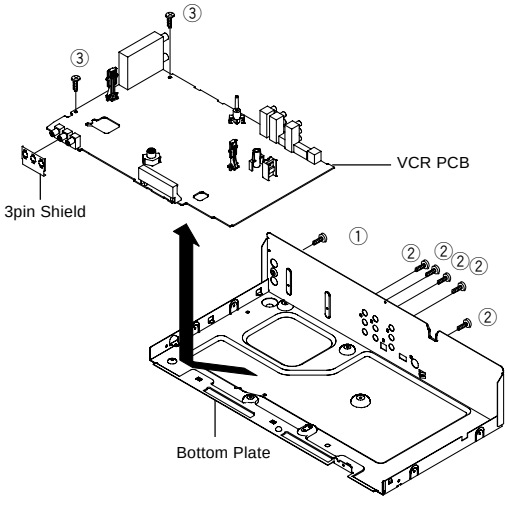


Fig. 1-5

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF VCR DECK PARTS

2-1: TOP BRACKET (Refer to Fig. 2-1)

1. Extend the 2 supports ①.
2. Slide the 2 supports ② and remove the Top Bracket.

NOTE

1. After the installation of the Top Bracket, bend the support ① so that the Top Bracket is fixed.

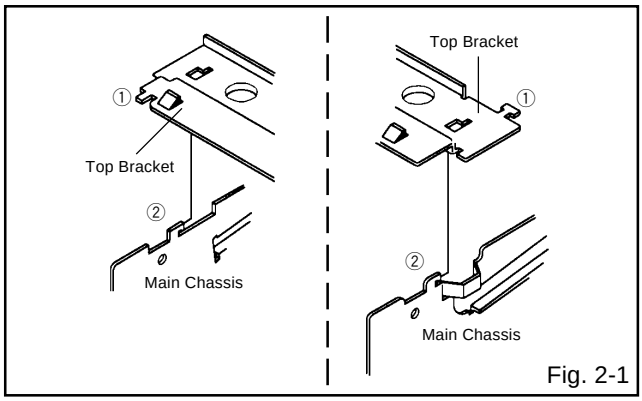


Fig. 2-1

2-2: CASSETTE HOLDER ASS'Y (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the front side.
2. Push the Locker R to remove the Cassette Side R.
3. Remove the Cassette Side L.

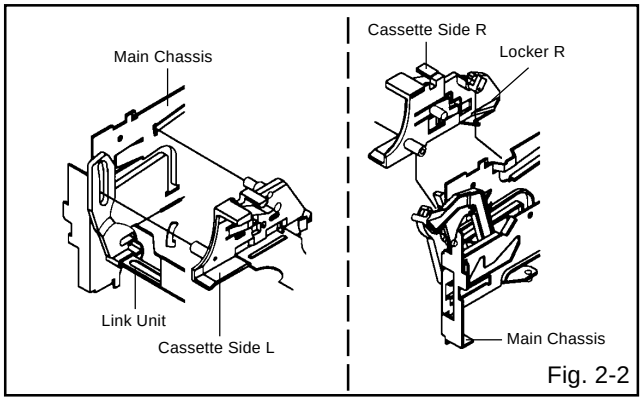


Fig. 2-2

2-3: CASSETTE SIDE L/R (Refer to Fig. 2-3-A)

1. Remove the Locker Spring.
2. Unlock the 4 supports ① and then remove the Cassette Side L/R.
3. Unlock the support ② and then remove the Locker R.

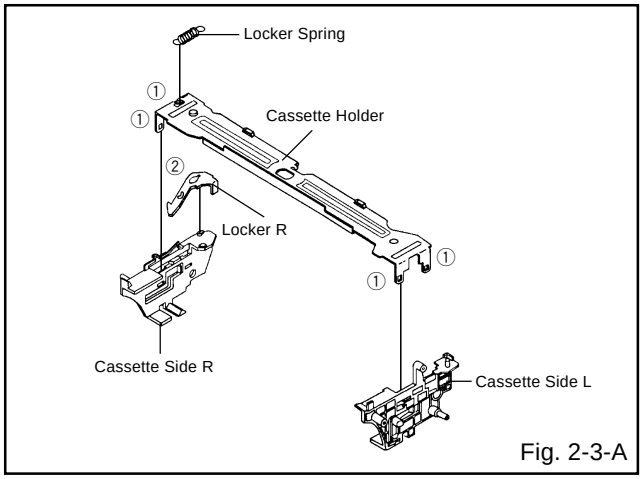


Fig. 2-3-A

NOTE

1. In case of the Locker R installation, check if the one position of Fig.2-3-B are correctly locked.
2. When you install the Cassette Side R, be sure to move the Locker R after installing.

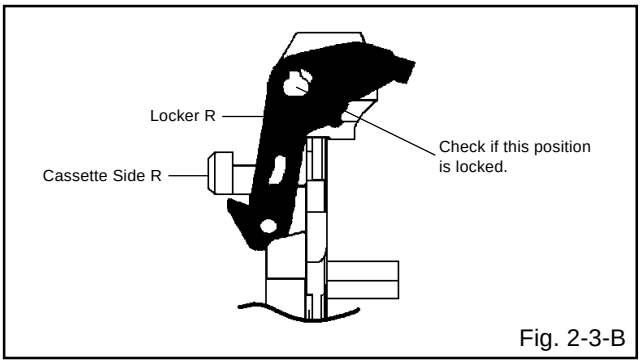


Fig. 2-3-B

2-4: LINK UNIT (Refer to Fig. 2-4)

1. Set the Link Unit to the Eject position.
2. Unlock the support ①.
3. Remove the (A) side of the Link Unit first, then remove the (B) side.

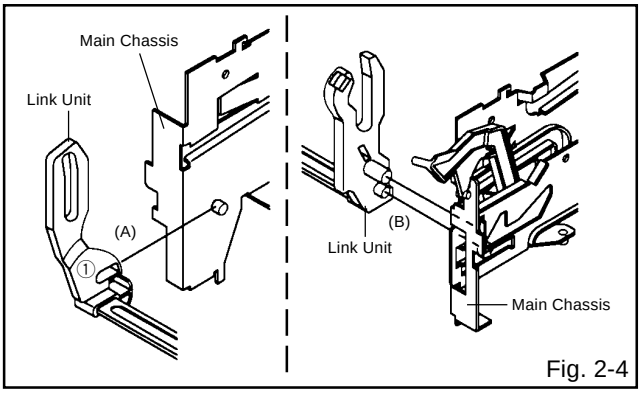


Fig. 2-4

2-5: LINK LEVER/FLAP LEVER (Refer to Fig. 2-5)

1. Extend the support ①.
2. Remove the Link Lever.
3. Remove the Flap Lever.

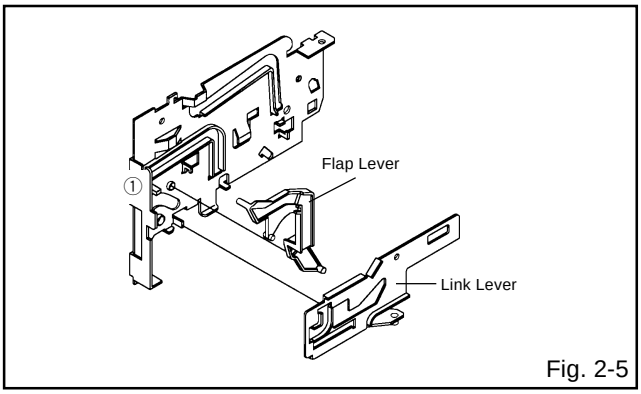


Fig. 2-5

DISASSEMBLY INSTRUCTIONS

2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Loading Motor.
3. Remove the Worm.

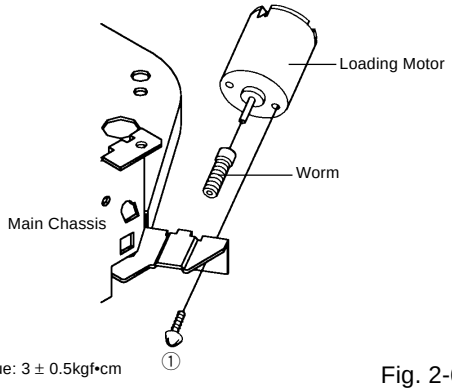


Fig. 2-6-A

NOTE

1. In case of the Worm installation, check if the value of the Fig. 2-6-B is correct.
2. In case of the Loading Motor installation, hook the wire on the Cassette Opener as shown Fig. 2-6-C.
3. When installing the wires between Capstan DD Unit and Loading Motor, connect them correctly as shown Fig. 2-6-D.

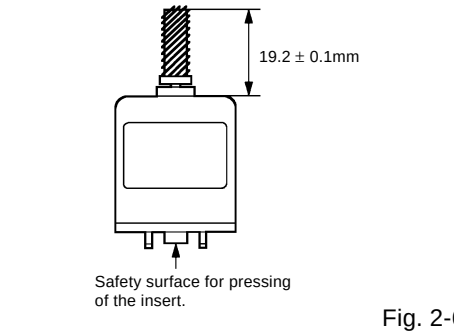


Fig. 2-6-B

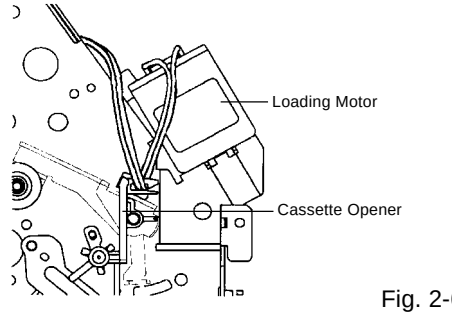


Fig. 2-6-C

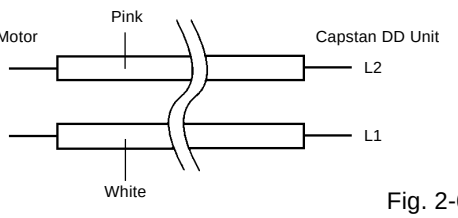


Fig. 2-6-D

2-7: TENSION ASS'Y (Refer to Fig. 2-7-B)

1. Turn the Pinch Roller Cam clockwise so that the Tension Holder hook is set to the position of Fig. 2-7-A to move the Tension Arm Ass'y.
2. Remove the Tension Spring.
3. Unlock the 2 supports ① and remove the Tension Band.
4. Unlock the support ② and remove the Tension Arm Ass'y.
5. Unlock the support ③ and remove the Tension Connect.
6. Float the hook ④ and turn it clockwise then remove the Tension Holder.

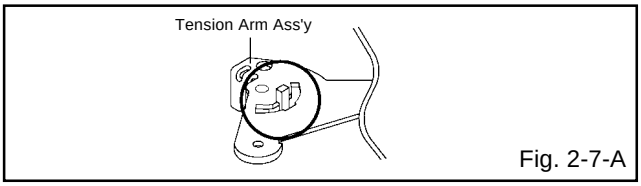


Fig. 2-7-A

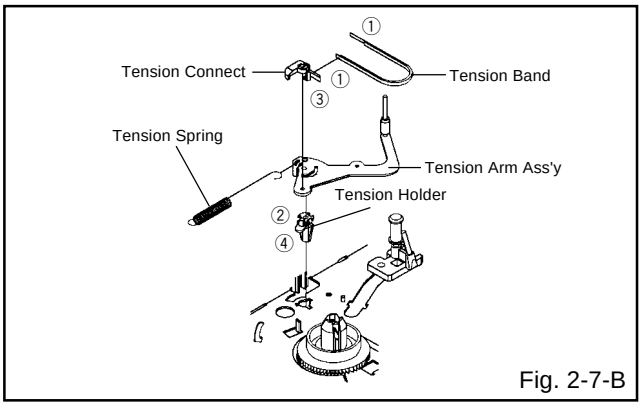


Fig. 2-7-B

NOTE

1. In case of the Tension Band installation, note the direction of the installation. **(Refer to Fig. 2-7-C)**
2. In case of the Tension Band installation, install correctly as Fig. 2-7-D.
3. In case of the Tension Connect installation, install as the circled section of Fig. 2-7-E.

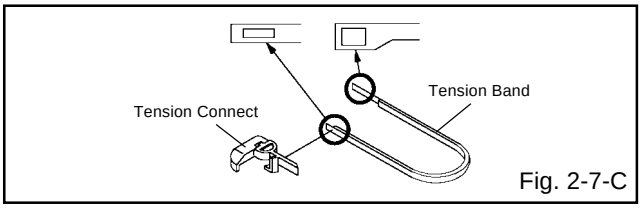


Fig. 2-7-C

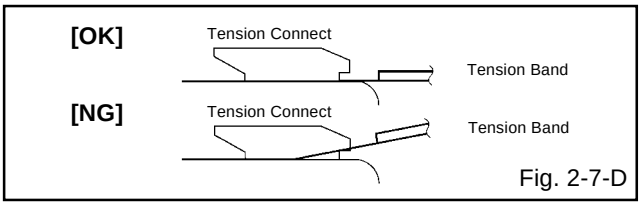


Fig. 2-7-D

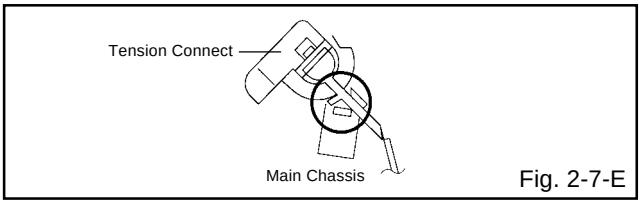


Fig. 2-7-E

DISASSEMBLY INSTRUCTIONS

2-8: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

1. Remove the T Brake Spring.
2. Turn the T Brake Arm clockwise and bend the hook section to remove it.
3. Unlock the 2 supports ① and remove the T Brake Band.

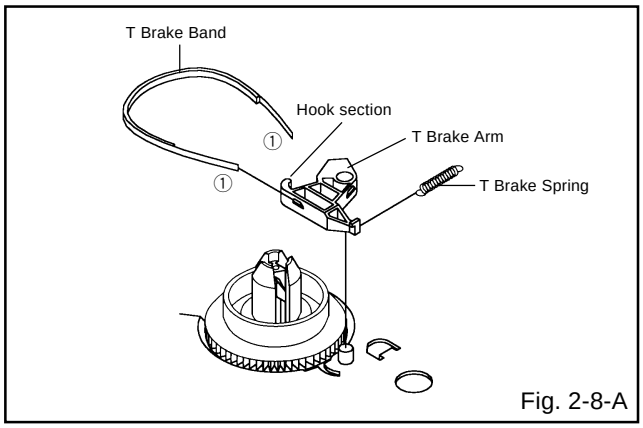


Fig. 2-8-A

NOTE

1. In case of the T Brake Band installation, install correctly as Fig. 2-8-B.

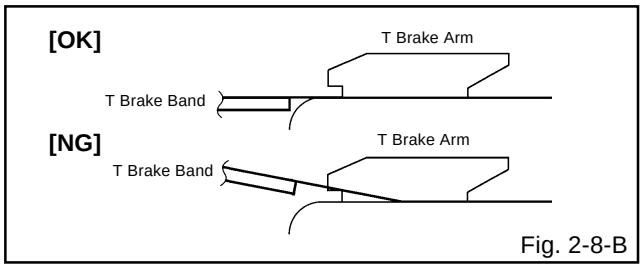


Fig. 2-8-B

2-9: S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-9-A)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.
3. Remove the Idler Arm Ass'y and Idler Gear.

NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel. (Use gloves.) **(Refer to Fig. 2-9-A)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and grease it (FG-84M). (If you do not grease, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

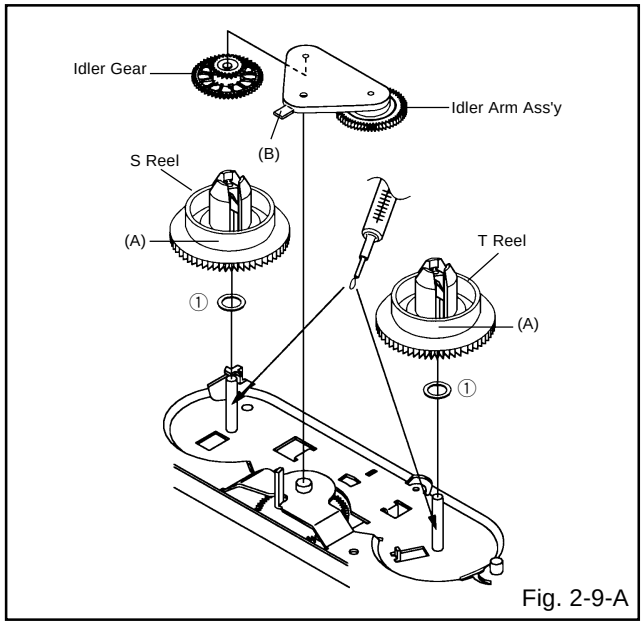


Fig. 2-9-A

NOTE

1. In case of the S Reel and T Reel installation, check if the correct parts are installed. **(Refer to Fig. 2-9-B)**
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-9-C. And also set it so that the section "B" of Fig. 2-9-A is placed under the Main Chassis tab.

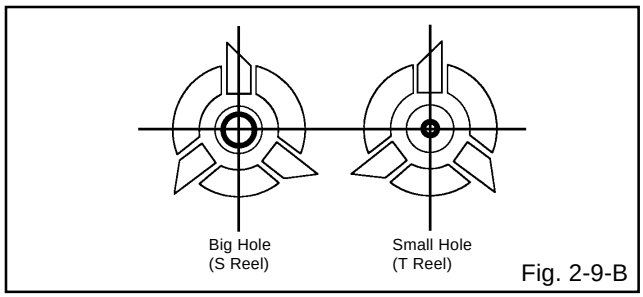


Fig. 2-9-B

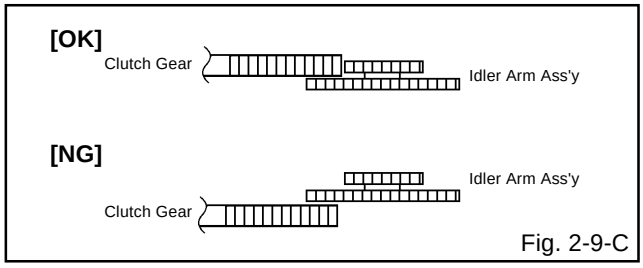


Fig. 2-9-C

DISASSEMBLY INSTRUCTIONS

2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/ P5 ARM ASS'Y (Refer to Fig. 2-10-A)

1. Unlock the support ① and remove the Cassette Opener.
2. Remove the Pinch Roller Block and P5 Arm Ass'y.

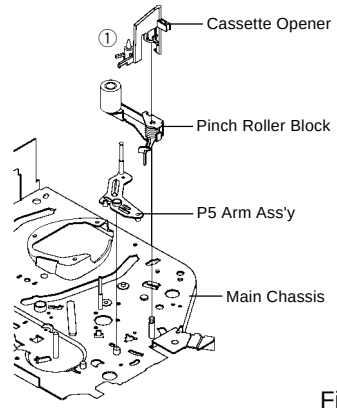


Fig. 2-10-A

NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. In case of the Pinch Roller Block and the Pinch Roller Cam installation, install correctly as Fig. 2-10-B.

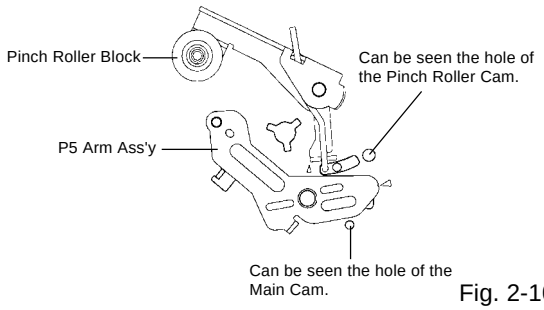


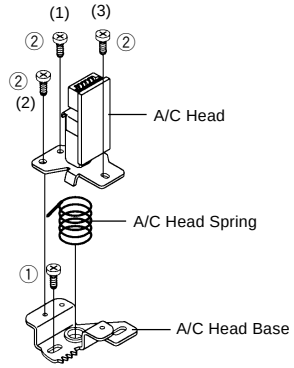
Fig. 2-10-B

2-11: A/C HEAD (Refer to Fig. 2-11-A)

1. Remove the screw ①.
2. Remove the A/C Head Base.
3. Remove the 3 screws ②.
4. Remove the A/C Head and A/C Head Spring.

NOTE

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-11-B.
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).



• Screw Torque: 5 ± 0.5kgf•cm (Screw ①)

Fig. 2-11-A

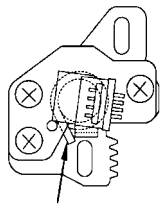
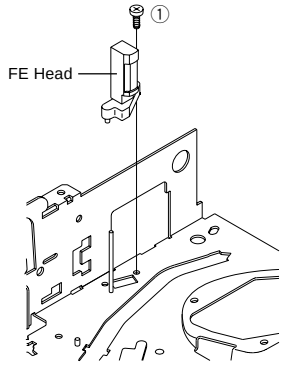


Fig. 2-11-B

2-12: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-12)

1. Remove the screw ①.
2. Remove the FE Head.



• Screw Torque: 5 ± 0.5kgf•cm
• The FE Head is not installed on the Video Cassette Player.

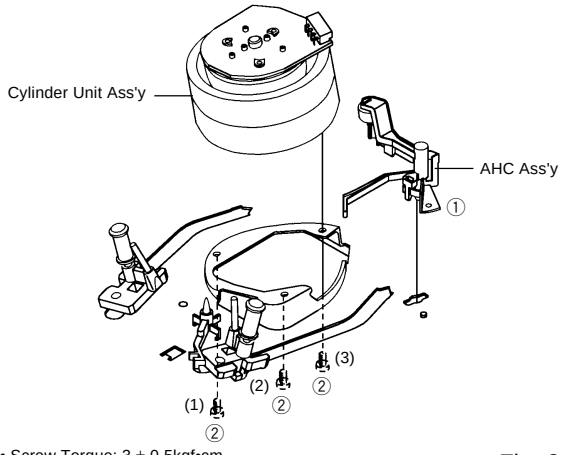
Fig. 2-12

2-13: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

1. Unlock the support ① and remove the AHC Ass'y.
2. Disconnect the following connector: (CD2001)
3. Remove the 3 screws ②.
4. Remove the Cylinder Unit Ass'y.

NOTE

1. When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.



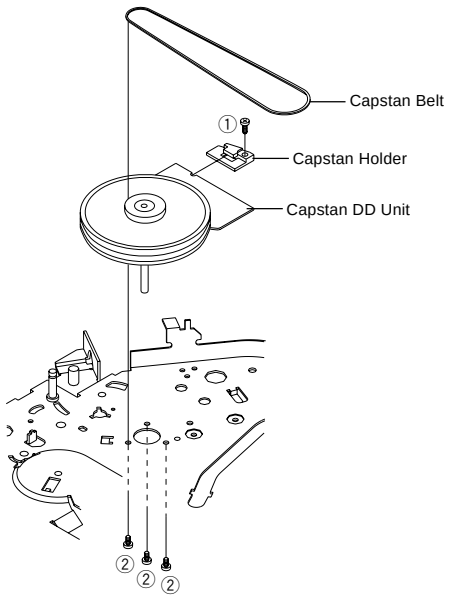
• Screw Torque: 3 ± 0.5kgf•cm

Fig. 2-13

DISASSEMBLY INSTRUCTIONS

2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14)

1. Remove the Capstan Belt.
2. Remove the screw ①.
3. Remove the Capstan Holder.
4. Remove the 3 screws ②.
5. Remove the Capstan DD Unit.



• Screw Torque: 4 ± 0.5kgf•cm

Fig. 2-14

2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

1. Remove the E-Ring ①, then remove the Main Cam.
2. Remove the E-Ring ②, then remove the Pinch Roller Cam and Joint Gear.

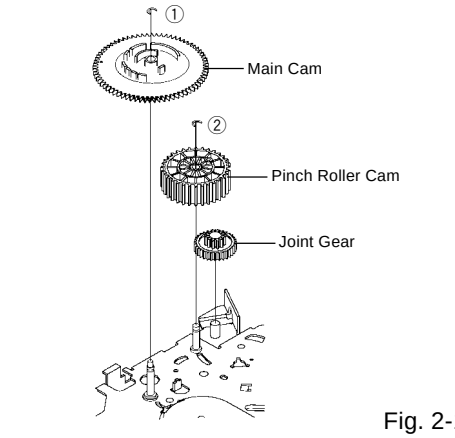


Fig. 2-15-A

NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers are met. **(Refer to Fig. 2-15-B)**

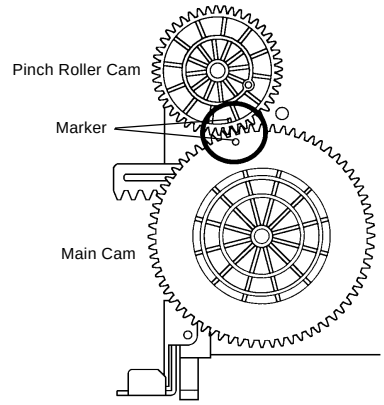


Fig. 2-15-B

2-16: LOADING GEAR S/T UNIT (Refer to Fig. 2-16-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.

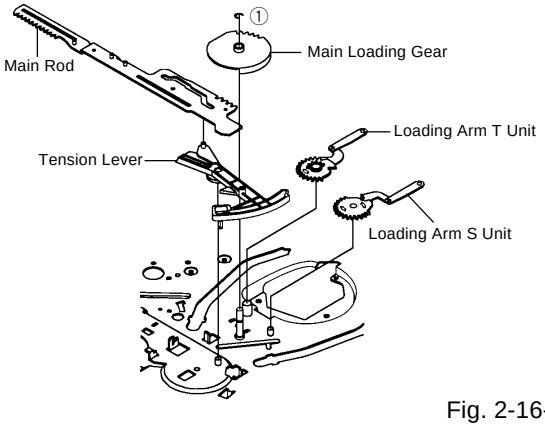


Fig. 2-16-A

NOTE

1. When you install the Loading Arm S Unit, Loading Arm T Unit and Main Loading Gear, align each marker. **(Refer to Fig. 2-16-B)**

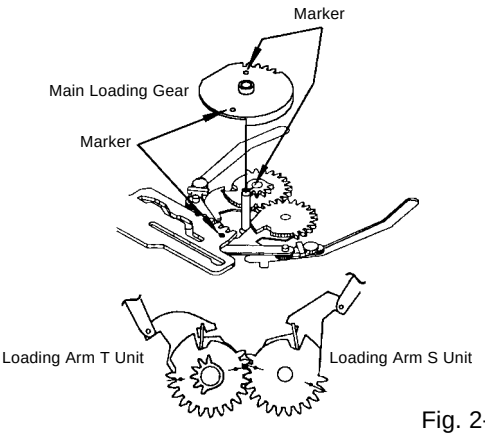


Fig. 2-16-B

DISASSEMBLY INSTRUCTIONS

2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/ CLUTCH GEAR (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer ①.
2. Remove the Clutch Ass'y and Ring Spring.
3. Remove the Clutch Lever.
4. Remove the Coupling Gear, Coupling Spring and Clutch Gear.

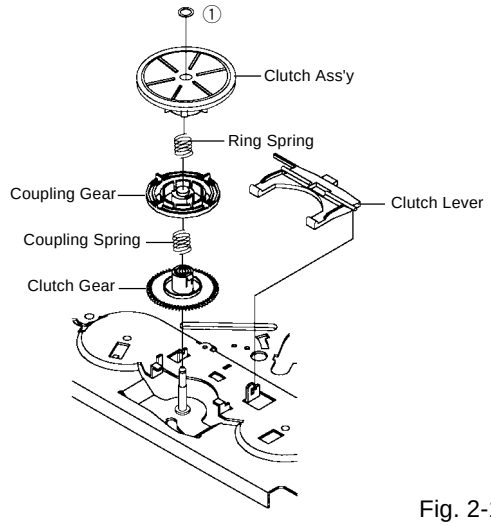


Fig. 2-17-A

NOTE

1. In case of the Clutch Ass'y installation, install it with inserting the spring of the Clutch Ass'y into the dent of the Coupling Gear. **(Refer to Fig. 2-17-B)**

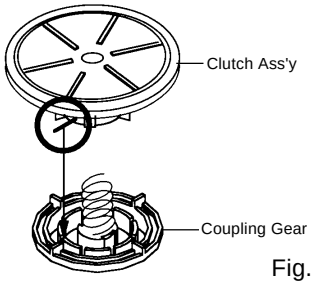


Fig. 2-17-B

2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP/LED REFLECTOR (Refer to Fig. 2-18-A)

1. Remove the P4 Cap.
2. Unlock the support ① and remove the Cassette Guide Post.
3. Remove the Inclined Base S/T Unit.
4. Remove the screw ②.
5. Remove the LED Reflector.

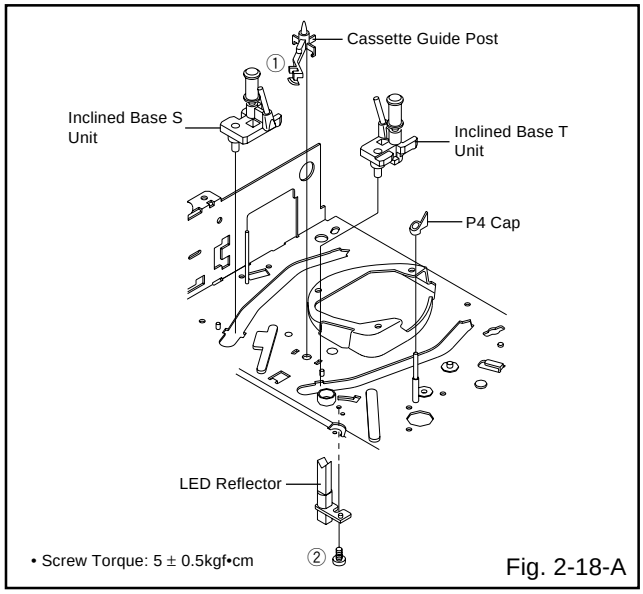


Fig. 2-18-A

NOTE

1. Do not touch the roller of Guide Roller.
2. In case of the P4 Cap installation, install it with parallel for "A" and "B" of Fig. 2-18-B.
3. In case of the Cassette Guide Post installation, install correctly as the circled section of Fig. 2-18-C.

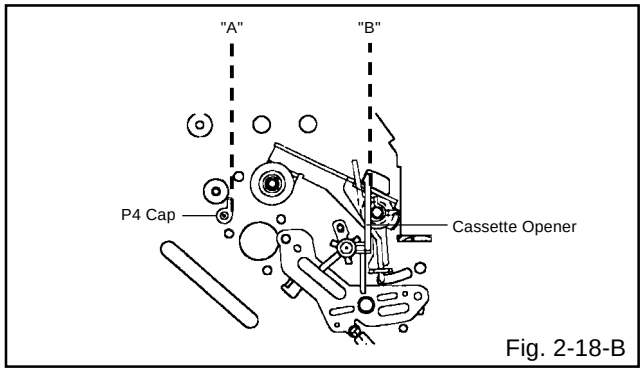


Fig. 2-18-B

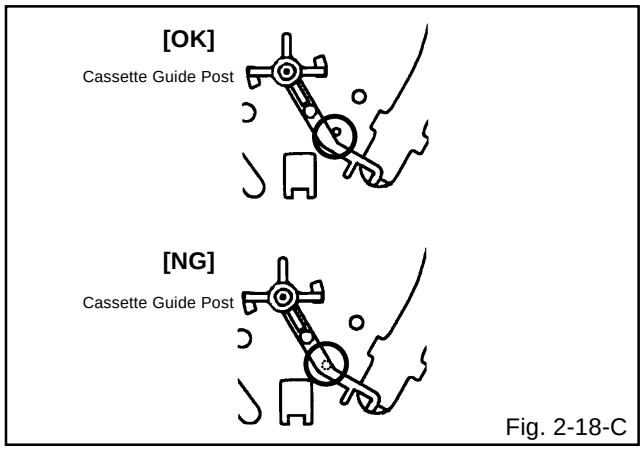


Fig. 2-18-C

DISASSEMBLY INSTRUCTIONS

3. REMOVAL OF DVD DECK PARTS

NOTE

1. Do not disassemble the DVD DECK PARTS except listed parts here. Minute adjustments are needed if the disassemble is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

3-1: TRAY (Refer to Fig. 3-1-A)

1. Set the Tray opened. **(Refer to the DISC REMOVAL METHOD AT NO POWER SUPPLY)**
2. Unlock the 2 supports ① and remove the Tray.

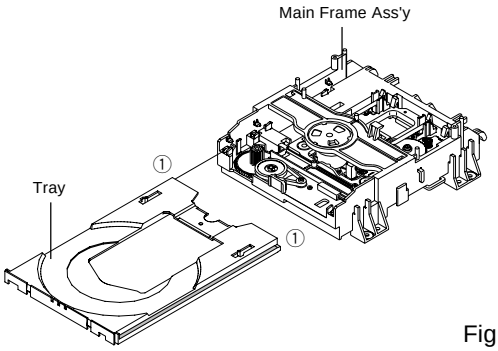


Fig. 3-1-A

NOTE

1. In case of the Tray installation, install them as the circled section of Fig. 3-1-B so that the each markers are met.

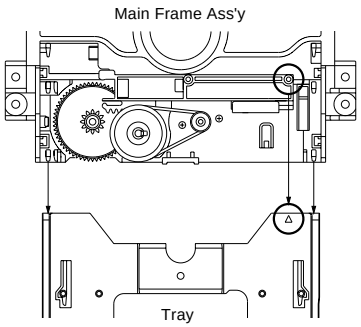


Fig. 3-1-B

3-2: MAIN CHASSIS ASS'Y (Refer to Fig. 3-2-A)

1. Remove the screw ①.
2. Unlock the 2 supports ②.
3. Remove the Insulator (R) from the Main Frame Ass'y.
4. Remove the Main Chassis Ass'y.

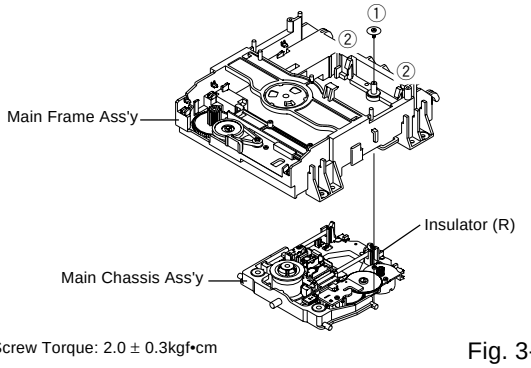


Fig. 3-2-A

NOTE

1. In case of the Main Chassis Ass'y, install it from (1) to (4) in order. **(Refer to Fig. 3-2-B)**
2. In case of the Main Chassis Ass'y installation, hook the wire on the Main Frame Ass'y as shown Fig. 3-2-C.

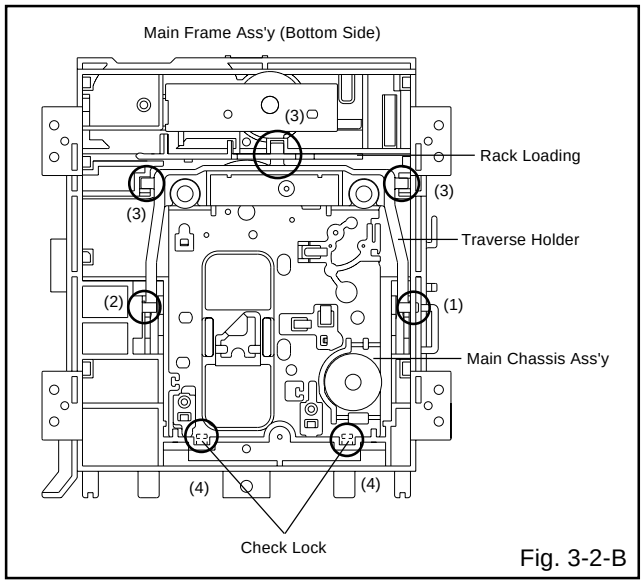


Fig. 3-2-B

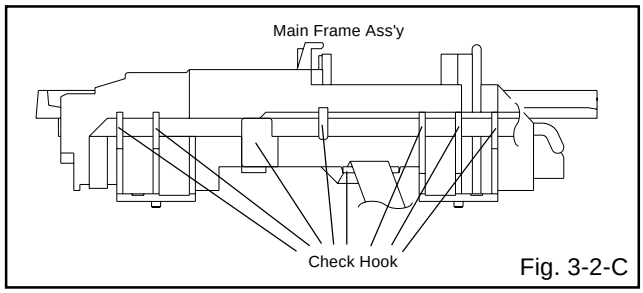


Fig. 3-2-C

3-3: LOADING MOTOR PCB ASS'Y/ LOADING BELT (Refer to Fig. 3-3-A)

1. Remove the Loading Belt.
2. Remove the screw ①.
3. Remove the 2 screws ②.
4. Remove the Loading Motor PCB Ass'y.
5. Remove the Pulley Gear.

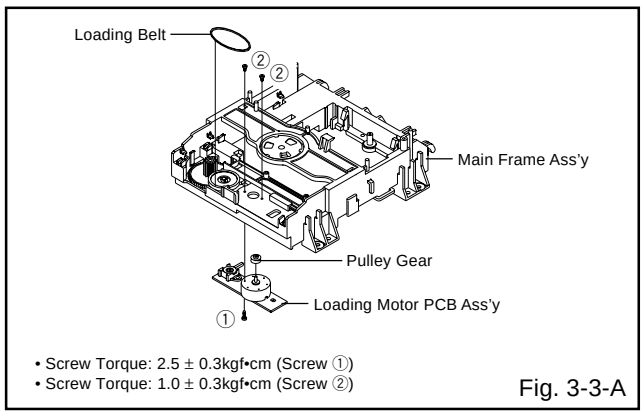


Fig. 3-3-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. In case of the Pulley Motor installation, check if the value of the Fig. 3-3-B is correct.
2. When installing the Loading Motor PCB Ass'y, install it correctly as Fig. 3-3-C.
3. In case of the Loading Motor PCB Ass'y installation, hook the wire on the Main Frame Ass'y as shown Fig. 3-3-C.

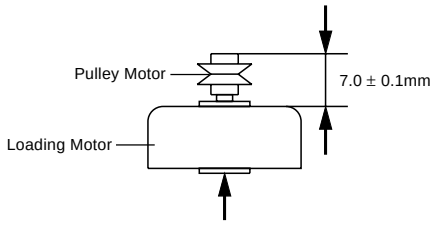


Fig. 3-3-B

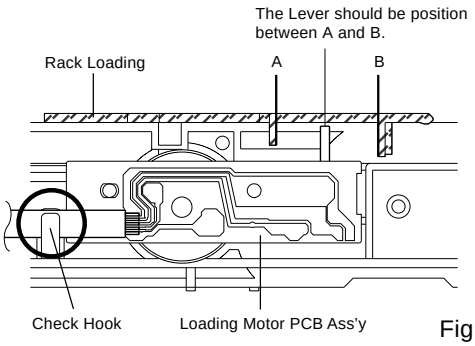


Fig. 3-3-C

3-4: RACK LOADING/MAIN GEAR/PULLEY GEAR (Refer to Fig. 3-4-A)

1. Press down the catcher ① and slide the Rack Loading.
2. Unlock the support ② and remove the Pulley Gear.
3. Remove the Main Gear.

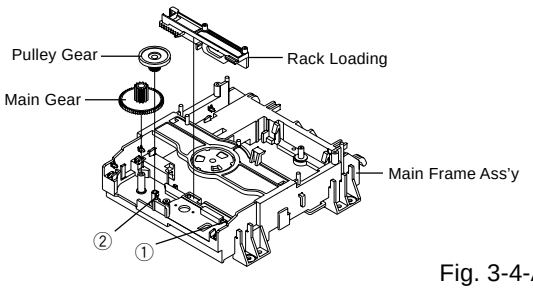


Fig. 3-4-A

NOTE

1. In case of the Rack Loading installation, do not mesh it to the Main Gear as shown the Fig. 3-4-B.

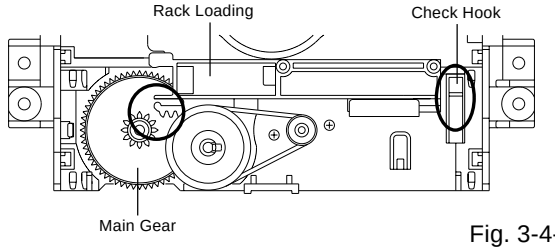


Fig. 3-4-B

3-5: CLAMPER ASS'Y (Refer to Fig. 3-5-A)

1. Press the Clamper and rotate the Clamper Plate clockwise, then unlock the 3 supports ①.
2. Remove the Clamper Plate, Clamper Magnet and Clamper.

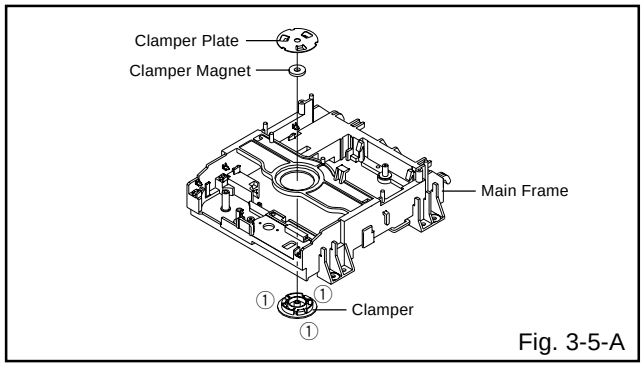


Fig. 3-5-A

NOTE

1. In case of the Clamper Ass'y installation, install correctly as Fig. 3-5-B.

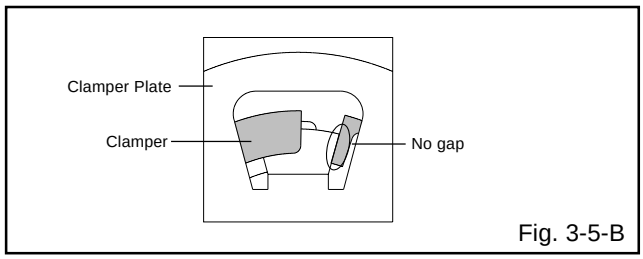


Fig. 3-5-B

3-6: TRAVERSE HOLDER/INSULATOR (F)/INSULATOR (R) (Refer to Fig. 3-6-A)

1. Remove the Traverse Holder.
2. Remove the 2 Insulator (F).
3. Remove the Insulator (R).

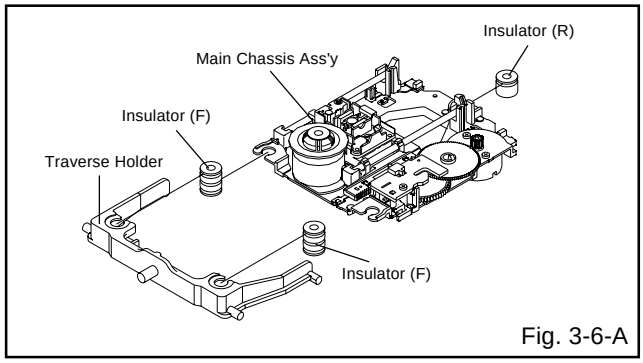


Fig. 3-6-A

NOTE

1. In case of the Insulator (F) installation, install correctly as Fig. 3-6-B.
2. In case of the Insulator (R) installation, install correctly as Fig. 3-6-C.

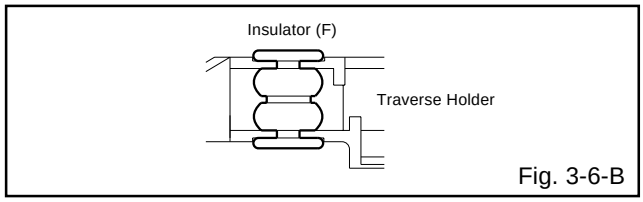


Fig. 3-6-B

DISASSEMBLY INSTRUCTIONS

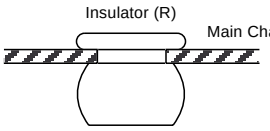
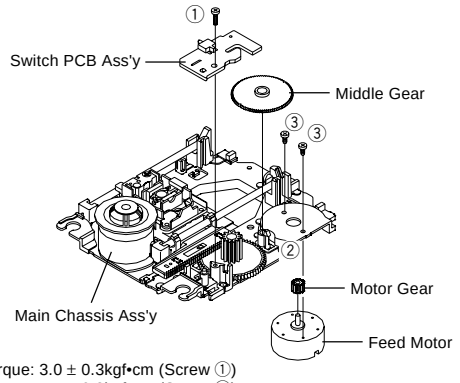


Fig. 3-6-C

3-7: SWITCH PCB ASS'Y/MIDDLE GEAR/FEED MOTOR (Refer to Fig. 3-7-A)

1. Remove the screw ①.
2. Remove the Switch PCB Ass'y.
3. Unlock the support ②.
4. Remove the Middle Gear.
5. Remove the 2 screws ③.
6. Remove the Feed Motor.
7. Remove the Motor Gear.



• Screw Torque: 3.0 ± 0.3kgf•cm (Screw ①)
• Screw Torque: 1.5 ± 0.3kgf•cm (Screw ③)

Fig. 3-7-A

NOTE

1. In case of the Motor Gear installation, check if the value of the Fig. 3-7-B is correct.
2. When installing the wire of the Switch PCB Ass'y, install it correctly as Fig. 3-7-C.
3. After the assembly of the Main Chassis Ass'y, hook the wire on the Main Chassis Ass'y as shown Fig. 3-7-D.

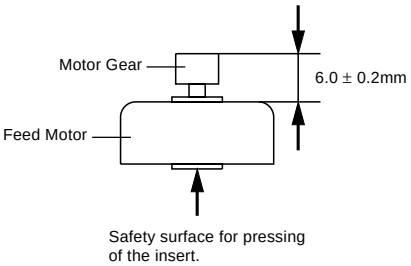


Fig. 3-7-B

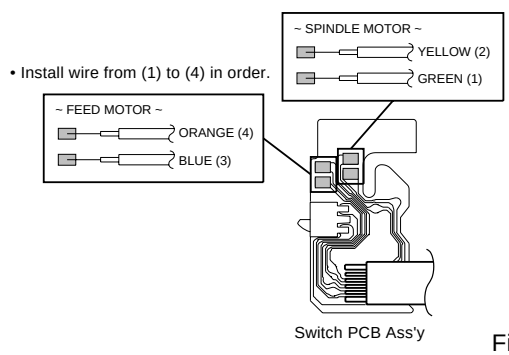
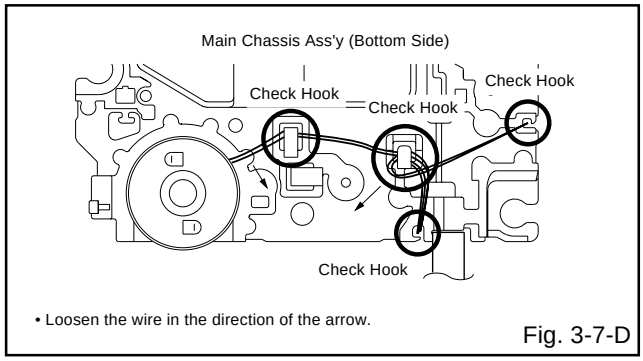


Fig. 3-7-C



• Loosen the wire in the direction of the arrow.

Fig. 3-7-D

3-8: FFC WIRE HANDLING

1. When installing the FFC, fold it correctly and install it as shown from Fig. 3-8-A to Fig. 3-8-C.

NOTE

1. Do not make the folding lines except the specified positions for the FFC.

[24 pin FFC]

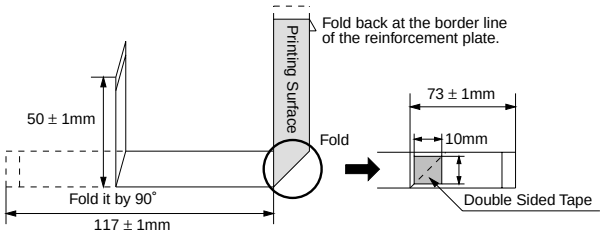
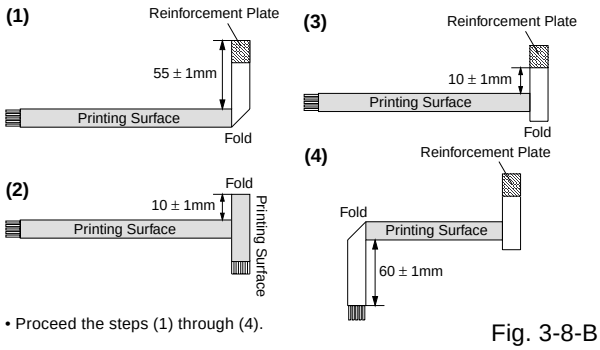


Fig. 3-8-A

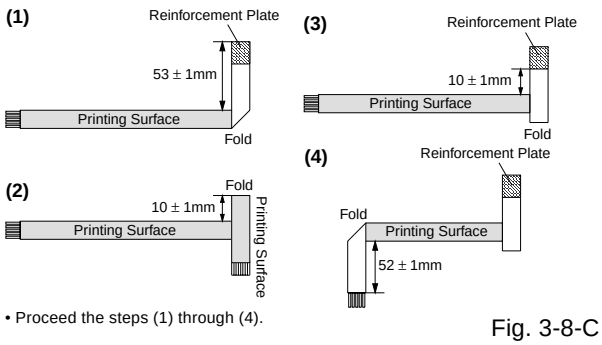
[5 pin FFC]



• Proceed the steps (1) through (4).

Fig. 3-8-B

[6 pin FFC]



• Proceed the steps (1) through (4).

Fig. 3-8-C

DISASSEMBLY INSTRUCTIONS

4. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 4-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

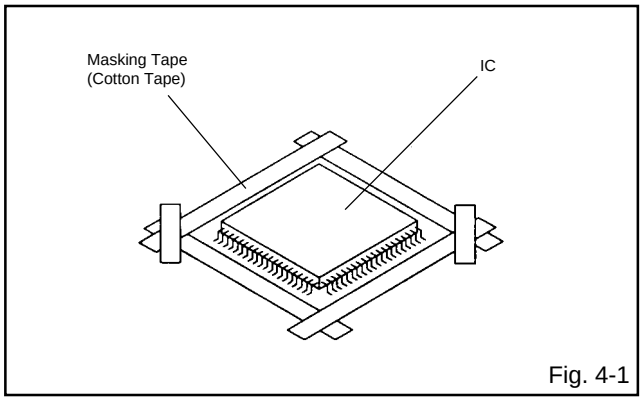


Fig. 4-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 4-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

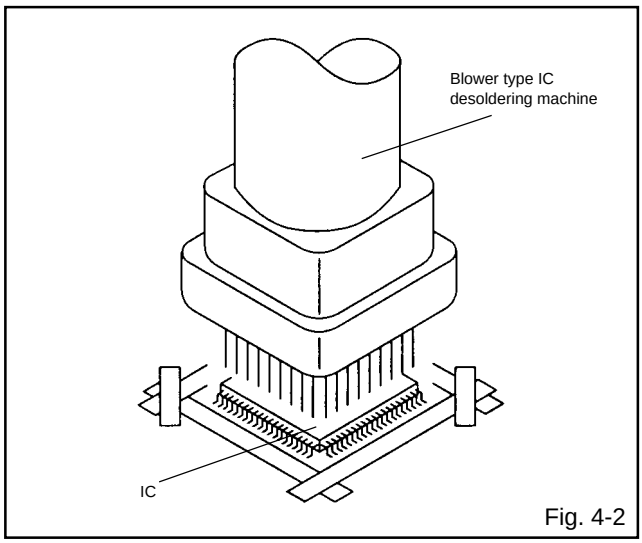


Fig. 4-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 4-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

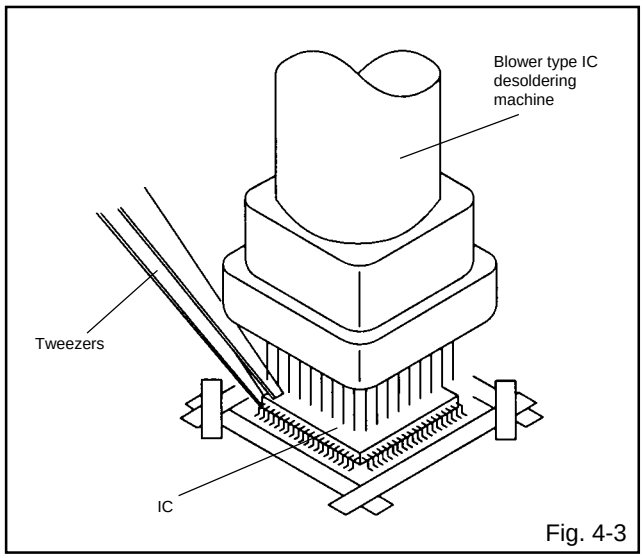


Fig. 4-3

4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 4-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

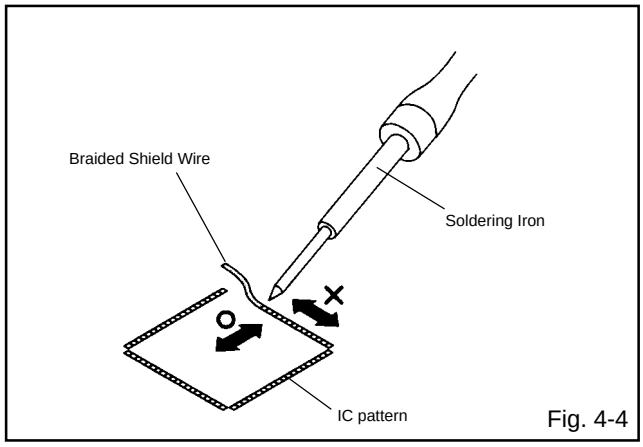


Fig. 4-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 4-5.)**

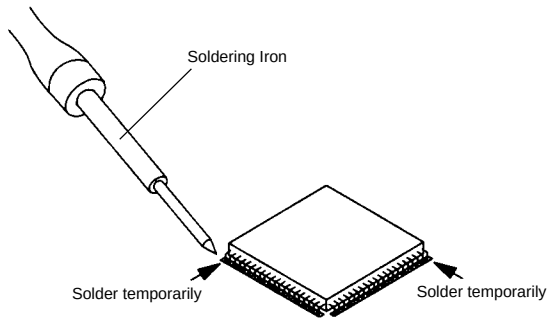


Fig. 4-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 4-6.)**

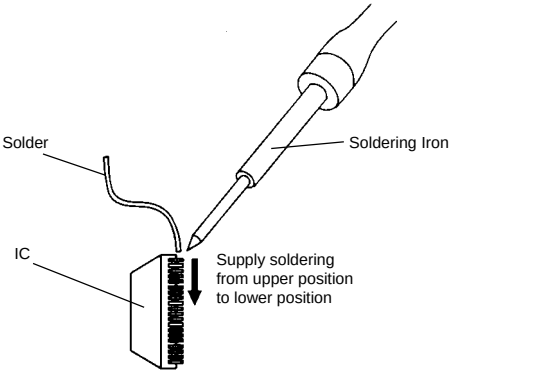


Fig. 4-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 4-7.)**

   NOTE

   Do not absorb the solder to excess.

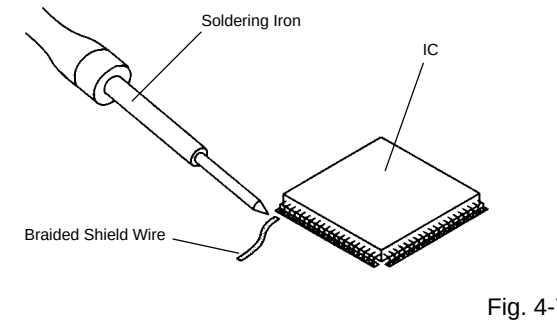


Fig. 4-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 4-8.)**

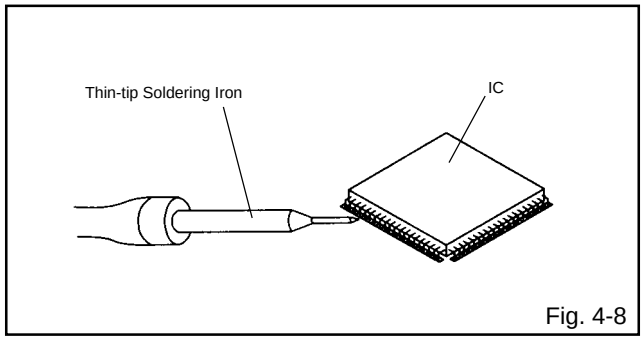


Fig. 4-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

KEY TO ABBREVIATIONS

A	**A/C**	:	Audio/Control
	ACC	:	Automatic Color Control
	AE	:	Audio Erase
	AFC	:	Automatic Frequency Control
	AFT	:	Automatic Fine Tuning
	AFT DET	:	Automatic Fine Tuning Detect
	AGC	:	Automatic Gain Control
	AMP	:	Amplifier
	ANT	:	Antenna
	A.PB	:	Audio Playback
	APC	:	Automatic Phase Control
	ASS'Y	:	Assembly
	AT	:	All Time
	AUTO	:	Automatic
	A/V	:	Audio/Video
B	**BGP**	:	Burst Gate Pulse
	BOT	:	Beginning of Tape
	BPF	:	Bandpass Filter
	BRAKE SOL	:	Brake Solenoid
	BUFF	:	Buffer
	B/W	:	Black and White
C	**C**	:	Capacitance, Collector
	CASE	:	Cassette
	CAP	:	Capstan
	CARR	:	Carrier
	CH	:	Channel
	CLK	:	Clock
	CLOCK (SY-SE)	:	Clock (Syscon to Servo)
	COMB	:	Combination, Comb Filter
	CONV	:	Converter
	CPM	:	Capstan Motor
	CTL	:	Control
	CYL	:	Cylinder
	CYL-M	:	Cylinder-Motor
	CYL SENS	:	Cylinder-Sensor
D	**DATA (SY-CE)**	:	Data (Syscon to Servo)
	dB	:	Decibel
	DC	:	Direct Current
	DD Unit	:	Direct Drive Motor Unit
	DEMOD	:	Demodulator
	DET	:	Detector
	DEV	:	Deviation
E	**E**	:	Emitter
	EF	:	Emitter Follower
	EMPH	:	Emphasis
	ENC	:	Encoder
	ENV	:	Envelope
	EOT	:	End of Tape
	EQ	:	Equalizer
	EXT	:	External
F	**F**	:	Fuse
	FBC	:	Feed Back Clamp
	FE	:	Full Erase
	FF	:	Fast Forward, Flipflop
	FG	:	Frequency Generator
	FL SW	:	Front Loading Switch
	FM	:	Frequency Modulation
	FSC	:	Frequency Sub Carrier
	FWD	:	Forward
G	**GEN**	:	Generator
	GND	:	Ground
H	**H.P.F**	:	High Pass Filter
	H.SW	:	Head Switch
	Hz	:	Hertz
I	**IC**	:	Integrated Circuit
	IF	:	Intermediate Frequency
	IND	:	Indicator
	INV	:	Inverter
K	**KIL**	:	Killer
L	**L**	:	Left
	LED	:	Light Emitting Diode
	LIMIT AMP	:	Limiter Amplifier
	LM, LDM	:	Loading Motor
	LP	:	Long Play
	L.P.F	:	Low Pass Filter
	LUMI.	:	Luminance
M	**M**	:	Motor
	MAX	:	Maximum
	MINI	:	Minimum
	MIX	:	Mixer, mixing
	MM	:	Monostable Multivibrator
	MOD	:	Modulator, Modulation
	MPX	:	Multiplexer, Multiplex
	MS SW	:	Mecha State Switch
N	**NC**	:	Non Connection
	NR	:	Noise Reduction
O	**OSC**	:	Oscillator
	OPE	:	Operation
P	**PB**	:	Playback
	PB CTL	:	Playback Control
	PB-C	:	Playback-Chrominance
	PB-Y	:	Playback-Luminance
	PCB	:	Printed Circuit Board
	P. CON	:	Power Control
	PD	:	Phase Detector
	PG	:	Pulse Generator
	P-P	:	Peak-to Peak
R	**R**	:	Right
	REC	:	Recording
	REC-C	:	Recording-Chrominance
	REC-Y	:	Recording-Luminance
	REEL BRK	:	Reel Brake
	REEL S	:	Reel Sensor
	REF	:	Reference
	REG	:	Regulated, Regulator
	REW	:	Rewind
	REV, RVS	:	Reverse
	RF	:	Radio Frequency
	RMC	:	Remote Control
	RY	:	Relay
S	**S. CLK**	:	Serial Clock
	S. COM	:	Sensor Common
	S. DATA	:	Serial Data
	SEG	:	Segment
	SEL	:	Select, Selector
	SENS	:	Sensor
	SER	:	Search Mode
	SI	:	Serial Input
	SIF	:	Sound Intermediate Frequency
	SO	:	Serial Output
	SOL	:	Solenoid
	SP	:	Standard Play
	STB	:	Serial Strobe
	SW	:	Switch

KEY TO ABBREVIATIONS

S	**SYNC**	:	Synchronization
	SYNC SEP	:	Sync Separator, Separation
T	**TR**	:	Transistor
	TRAC	:	Tracking
	TRICK PB	:	Trick Playback
	TP	:	Test Point
U	**UNREG**	:	Unregulated
V	**V**	:	Volt
	VCO	:	Voltage Controlled Oscillator
	VIF	:	Video Intermediate Frequency
	VP	:	Vertical Pulse, Voltage Display
	V.PB	:	Video Playback
	VR	:	Variable Resistor
	V.REC	:	Video Recording
	VSF	:	Visual Search Fast Forward
	VSR	:	Visual Search Rewind
	VSS	:	Voltage Super Source
	V-SYNC	:	Vertical-Synchronization
	VT	:	Voltage Tuning
X	**X'TAL**	:	Crystal
Y	**Y/C**	:	Luminance/Chrominance

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit or on the main unit and on the remote control for more than a standard time in the appropriate condition. (See below chart.)
In case of the main unit and remote control, press the remote control buttons first, then press the main unit buttons.

Set Condition	Set Key	Set Key	Standard Time	Operations
VCR mode	CH UP	FF	2 sec.	PLAY/REC total hours are displayed on the TV Monitor. Refer to the “PREVENTIVE CHECKS AND SERVICE INTERVALS” (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the “WHEN REPLACING EEPROM (MEMORY) IC”.
VCR mode	CH UP	PLAY	2 sec.	Initialization of the factory on VCR. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the clock setting, the channel setting, and PLAY/REC total hours.
VCR mode (Playback)	CH UP	STOP	2 sec.	Adjust the PG SHIFTER automatically. Refer to the “ELECTRICAL ADJUSTMENT”.
Power Off	CH DOWN	POWER	2 sec.	VCR operation mode at no connection of DVD. Refer to the “PREPARATION FOR SERVICING” NOTE: Although the DVD is connected, the DVD mode cannot be selected.

Set Condition	Set Key	Remocon Key	Standard Time	Operations
DVD mode (No disc)	REC/OTR	4	2 sec.	Initialization of the factory on DVD. NOTE: Do not use this for the normal servicing. This function will only work without the setting of DVD disc at DVD mode. While pressing the Remocon Key for more than 2 seconds, press the Set Key simultaneously.
DVD mode (No disc)	STOP	7	3 sec.	Releasing of PARENTAL LOCK. Refer to the “PARENTAL CONTROL - RATING LEVEL”. NOTE: The function will only work without the setting of DVD disc at DVD mode.

Method	Operations
Press the ATR button on the remote control for more than 2 seconds during PLAY.	Adjusting of the Tracking to the center position. Refer to the “MECHANICAL ADJUSTMENT” (GUIDE ROLLER) and “ELECTRICAL ADJUSTMENT” (PG SHIFTER).
Make the short circuit between the test point of SERVICE and the GND.	The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape. Refer to the “PREPARATION FOR SERVICING”

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage.
Parts replacing time does not mean the life span for individual parts.
Also, long term storage or misuse may cause transformation and aging of rubber parts.
The following list means standard hours, so the checking hours depends on the conditions.

Time / Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	2,500 hours	Notes
Audio Control Head	■	■	■	●	●	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	●	●	
Capstan Belt		●	●	●	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	●	●	●	●	
Capstan DD Unit		●	●	●	●	
Loading Motor					●	
Tension Band		●	●	●	●	
T Brake Band		●	●	●	●	
Clutch Ass'y		●	●	●	●	
Idler Arm Ass'y		●	●	●	●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	●	●	●	●	Clean the Head

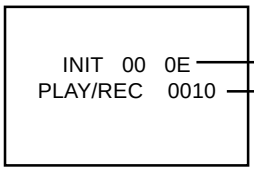
■ : Clean
● : Check it and if necessary, replace it.

CONFIRMATION OF HOURS USED

PLAY/REC total hours can be checked on the screen.
Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Connect the set to TV Monitor.
2. Turn on the POWER, and set to the VCR mode.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.
   The **Fig. 1** screen will appear on TV Monitor.
4. After the confirmation of using hours, turn off the power.



Initial setting content of MEMORY IC.
PLAY/REC total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

Fig. 1

PREVENTIVE CHECKS AND SERVICE INTERVALS

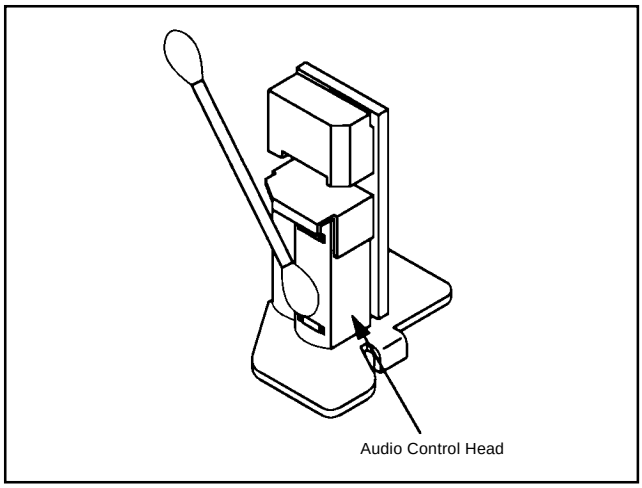
CLEANING

NOTE

After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

1. AUDIO CONTROL HEAD

Clean the Audio Control Head with the cotton stick soaked by alcohol. Clean the full erase head in the same manner. **(Refer to the figure below.)**



2. TAPE RUNNING SYSTEM

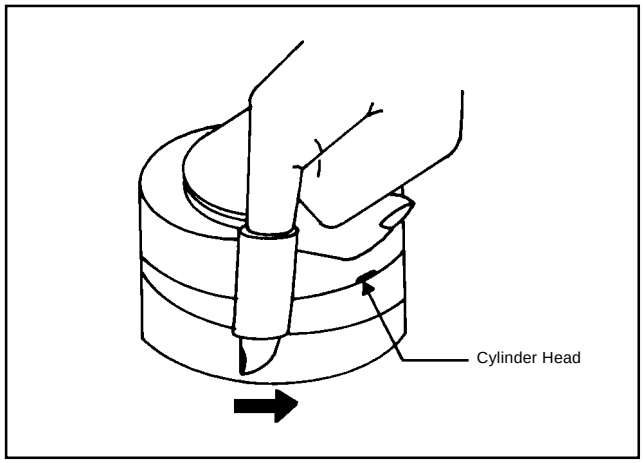
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

3. CYLINDER

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

NOTE

Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head.
Use the chamois one by one.



WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: INI 34 and INI 35 cannot be set. Because, the total time for the PLAY/REC of the main unit is recorded.

INIT	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	0E	10	DC	60	64	64	4A	86	0B	2B	86	32	0A	08	0A	01
10	AF	97	95	8A	A0	57	31	04	88	A5	9F	3A	00	10	BF	00
20	3A	11	22	70	61	2A	3A	00	0B	00	40	C5	9A	B0	00	37
30	03	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1

1. Connect the set to TV Monitor.
2. Turn on the POWER, and set to the VCR mode.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.
   ADDRESS and DATA will appear on TV Monitor as **Fig 1** .

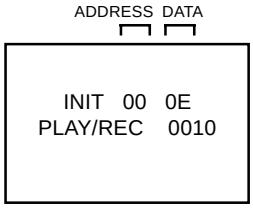


Fig. 1

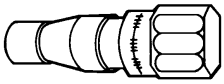
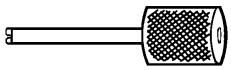
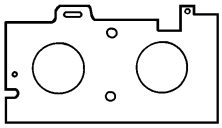
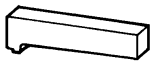
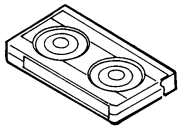
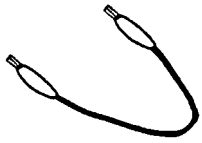
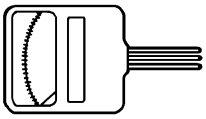
4. ADDRESS is now selected and should “blink”. Using the Tracking + or - button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press ENTER to select DATA. When DATA is selected, it will “blink”.
6. Again, step through the DATA using Tracking + or - button until required DATA value has been selected.
7. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

10. Turn on the POWER, and set to the VCR mode.
11. Press both CH UP button on the set and the PLAY button on the set for more than 2 seconds.
12. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

SERVICING FIXTURES AND TOOLS

(For 2 heads model) VHS Alignment Tape JG001 (VN_2S-$LI6^3$) JG001A (VN_2S-$CO1^3$) JG001Q (VN_2S-$LI6^3H$) JG001T (VN_2S-$X6^3$) 	**(For 4 heads model)** VHS Alignment Tape JG001B (VN_1S-$LI6^3$) JG001I (VN_1S-$CO1^3$) JG001P (VN_1S-$LI6^3H$) JG001S (VN_1S-$X6^3$) 	JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm) 	JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 
JG153 X Value Adjustment Screwdriver 	JG022 Master Plane 	JG024A Reel Disk Height Adjustment Jig 	JG100A Torque Tape (VHT-063) 
JG154 Cable 	JG185 Tentelometer 		

Ref. No.	Part No.	Parts Name	Remarks
JG001	APJG001000	VHS Alignment Tape	Monoscope, 6KHz **(For 2 heads model)**
JG001A	APJG001A00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 heads model)**
JG001Q	APJG001Q00	VHS Alignment Tape	Hi-Fi Audio **(For 2 heads model)**
JG001T	APJG001T00	VHS Alignment Tape	X Value Adjustment **(For 2 heads model)**
JG001B	APJG001B00	VHS Alignment Tape	Monoscope, 6KHz **(For 4 heads model)**
JG001I	APJG001I00	VHS Alignment Tape	Color Bar, 1KHz **(For 4 heads model)**
JG001P	APJG001P00	VHS Alignment Tape	Hi-Fi Audio **(For 4 heads model)**
JG001S	APJG001S00	VHS Alignment Tape	X Value Adjustment **(For 4 heads model)**
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10~90gf•cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60~600gf•cm)	VSR Torque, Brake Torque (S Reel)
JG005	APJG005000	Post Adjustment Screwdriver	Guide Roller Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG100A	APJG100A00	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback
JG154	APJG154000	Cable	Used to connect the test point of SERVICE and GROUND
JG185	APJG185000	Tentelometer	Confirmation of Tape Tension on Playback

PREPARATION FOR SERVICING

1. While pressing the CH DOWN button on the set for more than 2 seconds, press the POWER button on the set simultaneously at the Power OFF. Although the DVD is connected, the DVD mode cannot be selected.
2. Short circuit between **TP3001** and **Ground** with the cable JG154.
   (The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape.)
3. In case of using a cassette tape, press the STOP/EJECT button to insert or eject a cassette tape.
   Turn on the power and re-check the cable before checking the trouble points.

When you servicing with connection of DVD, perform the operations above step 2 to step 3.

MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane **(JG022)** and reel disk height adjustment jig **(JG024A)** on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A.**
3. While turning the reel and confirm the following points. Check if the surface “A” of reel disk is lower than the surface “B” of reel disk height adjustment jig **(JG024A)** and is higher than the surface “C”. If it is not passed, place the height adjustment washers and adjust to 10(+2, -0)mm.
4. Adjust the other reel in the same way.

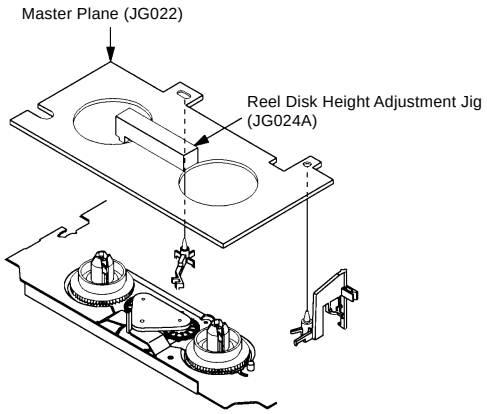


Fig. 1-1-A

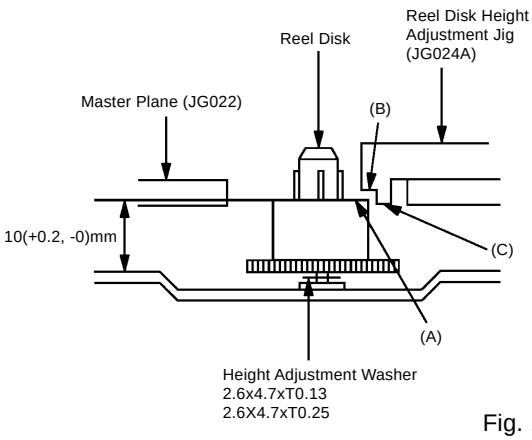


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the adjusting section for the Tension Arm position so that the Tension Arm top is within the standard line of Main Chassis.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

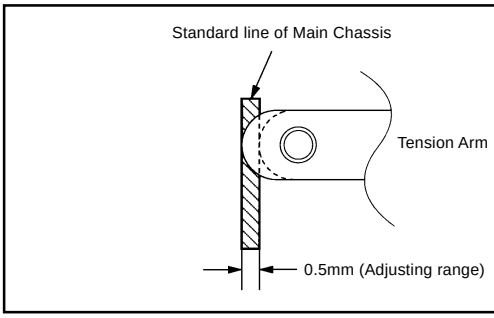


Fig. 1-2-A

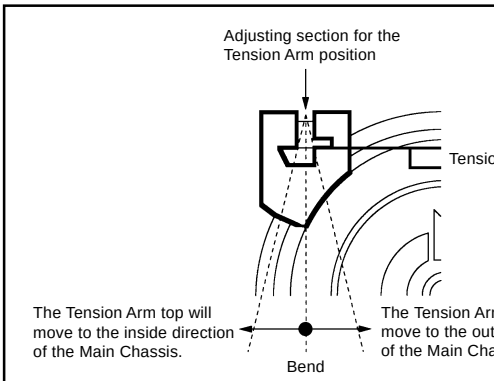


Fig. 1-2-B

1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. Load a video tape (T-120) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer **(JG185)** as shown in **Fig. 1-3**. Confirm that the meter indicates 20 ± 2gf in the beginning of playback.

• USING A CASSETTE TYPE TORQUE TAPE **(JG100A)**

1. After confirmation and adjustment of Tension Post position **(Refer to item 1-2)**, load the cassette type torque tape **(JG100A)** and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 50~90gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates 25~40gf•cm during playback in SP mode.

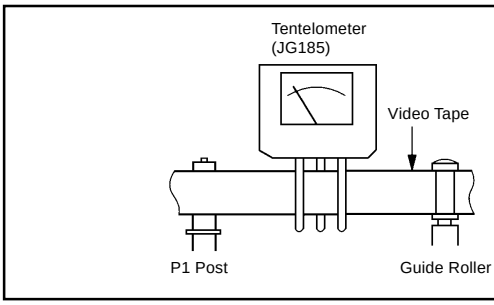


Fig. 1-3

MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Set to the Picture Search (Rewind) mode. **(Refer to Fig.1-4-B)**
2. Then, confirm that it indicates 120~180gf•cm.

NOTE

Install the Torque Gauge on the reel disk firmly. Press the REW button to turn the reel disk.

1-5: CONFIRMATION OF REEL BRAKE TORQUE

(S Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A**.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Turn the Torque Gauge **(JG002F)** clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

(T Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A**.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge **(JG002E)** and Adapter **(JG002B)** on the T reel. Turn the Torque Gauge **(JG002E)** counterclockwise.
4. Then, confirm that it indicates 30~50gf•cm.

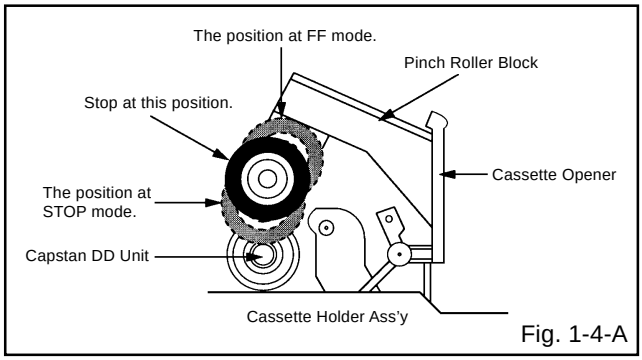


Fig. 1-4-A

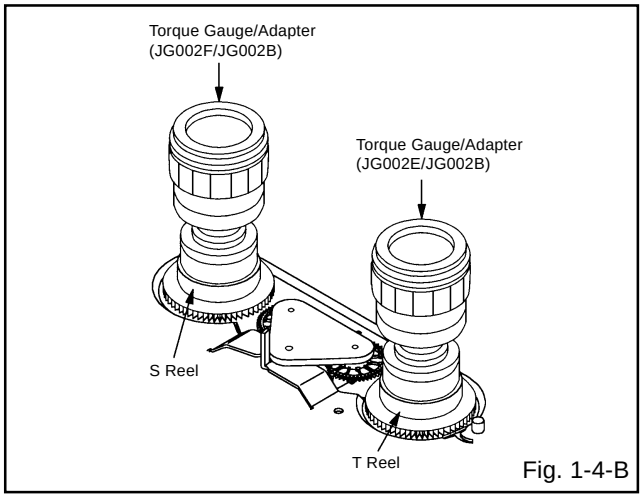


Fig. 1-4-B

NOTE

If the torque is out of the range, replace the following parts.

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y T Reel side: T Reel/T Brake Band//T Brake Spring/T Brake Arm

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape **(JG001 or JG001B). (Refer to SERVICING FIXTURE AND TOOLS)**
2. Connect CH-1 of the oscilloscope to **TP101 (Envelope)** and CH-2 to **TP3002 (SW Pulse)**.
3. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. When observing the envelope, adjust the Adjusting Driver **(JG005)** slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in **Fig. 2-1-B**, even if you press the Tracking Button to move the envelope (The envelope waveform will begin to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback. **(Refer to the ELECTRICAL ADJUSTMENTS)**

NOTE

After adjustment, confirm and adjust A/C head. **(Refer to item 2-2)**

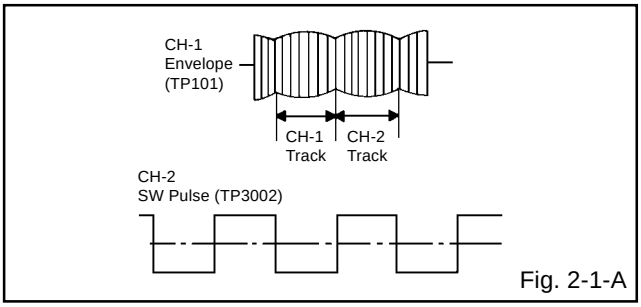


Fig. 2-1-A

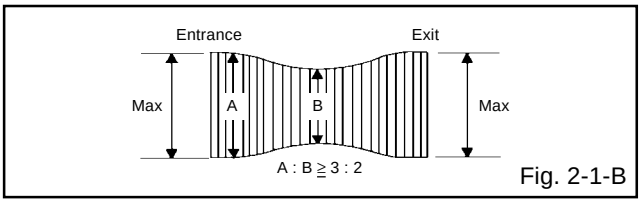


Fig. 2-1-B

MECHANICAL ADJUSTMENTS

2-2: CONFIRMATION AND ADJUSTMENT OF AUDIO/ CONTROL HEAD

When the Tape Running Mechanism does not work well, adjust the following items.

1. Playback the VHS Alignment Tape **(JG001 or JG001B). (Refer to SERVICING FIXTURE AND TOOLS)**
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in **Fig. 2-2-A.**
   a) When the reflected picture is distorted, turn the screw ① clockwise until the distortion is disappeared.
   b) When the reflected picture is not distorted, turn the screw ① counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw ② to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C.**
   c) When the height is not correct, turn the screw ③ to adjust the height. Then, adjust the 1~3 again.

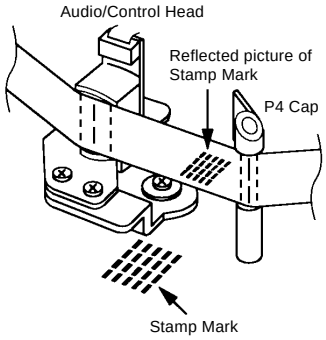


Fig. 2-2-A

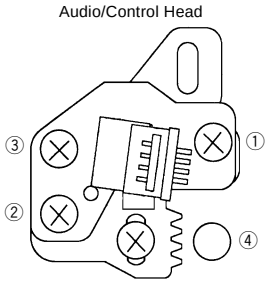


Fig. 2-2-B

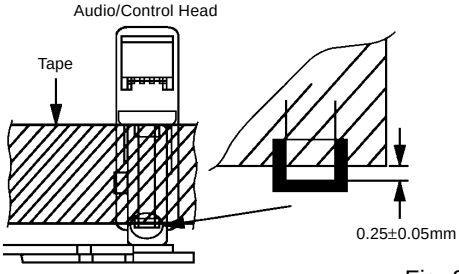


Fig. 2-2-C

2-3: TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)

1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope to **TP3002**, CH-2 to **TP101** and CH-3 to **HOT side of Audio Out Jack**.
6. Playback the VHS Alignment Tape **(JG001S or JG001T). (Refer to SERVICING FIXTURE AND TOOLS)**
7. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
8. Set the X Value adjustment driver **(JG153)** to the ④ of **Fig. 2-2-B**. Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-3.**

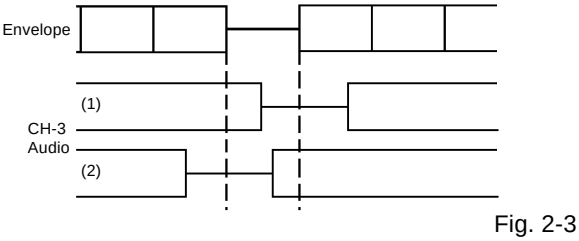


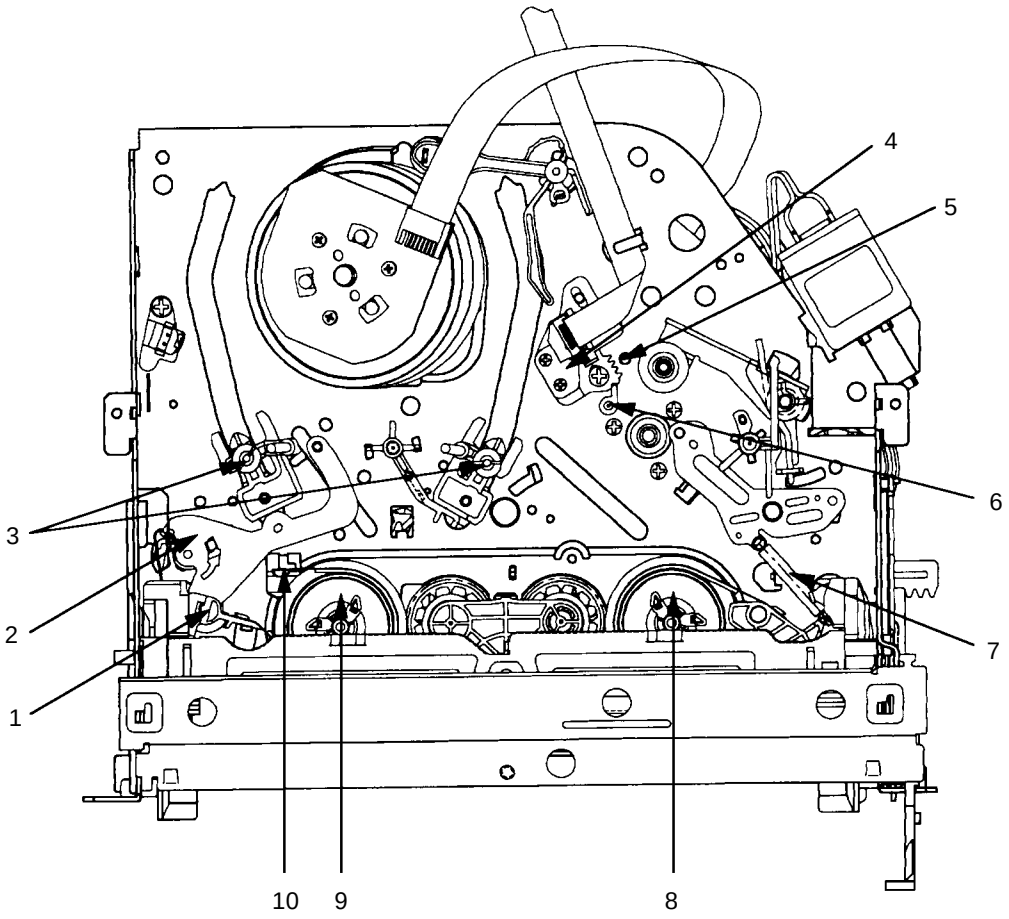
Fig. 2-3

2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP101** and CH-2 to the **Hi-Fi Audio Out Jack**.
2. Playback the VHS Alignment Tape **(JG001P or JG001Q). (Refer to SERVICING FIXTURE AND TOOLS)**
3. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press and hold the ATR button on the remote control more than 2 seconds to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver **(JG153)** to ④ of **Fig. 2-2-B**. Change the X Value and adjust it so that the value becomes within 2 steps.

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Connect
2. Tension Arm
3. Guide Roller
4. Audio/Control Head
5. X value adjustment driver hole
6. P4 Post
7. T Brake Spring
8. T Reel
9. S Reel
10. Adjusting section for the Tension Arm position

ELECTRICAL ADJUSTMENTS

Read and perform this adjustment when repairing the circuits or replacing electrical parts or PCB assemblies.

1. BASIC ADJUSTMENT

CAUTION

- When you exchange IC and Transistor for a heat sink, apply the silicon grease **(YG6260M)** on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

1-1: PG SHIFTER

CONDITIONS

MODE-PLAYBACK
Input Signal-Alignment Tape **(JG001P)**

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP3002** and CH-2 to **J8001(Video Out)**.
2. Playback the alignment tape. **(JG001P)**
3. Press and hold the Tracking-Auto button on the remote control more than 2 seconds to set tracking to center.
4. Press both CH UP button on the set and the STOP button on the set for more than 2 seconds.

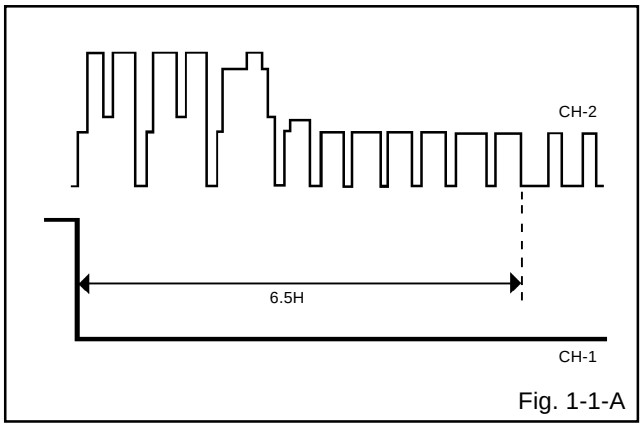


Fig. 1-1-A

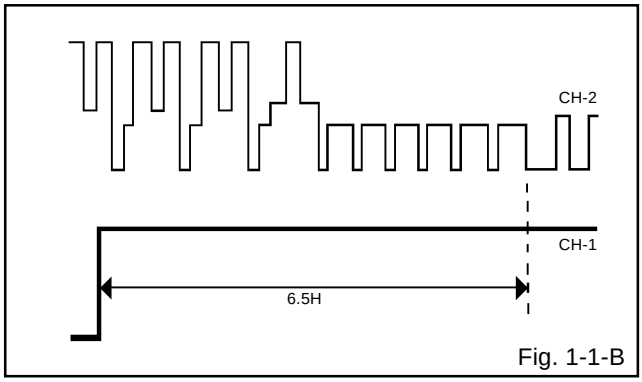
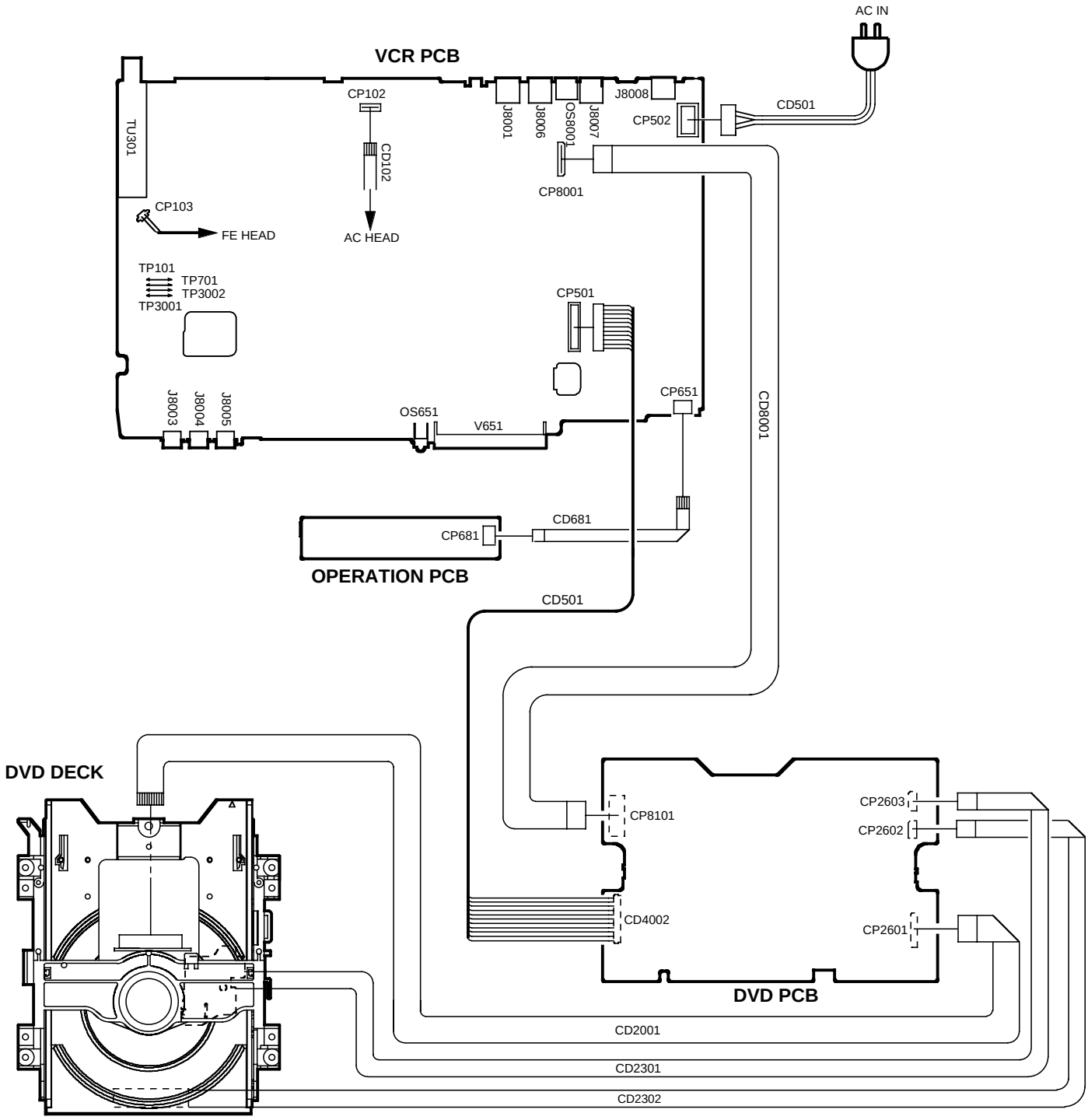


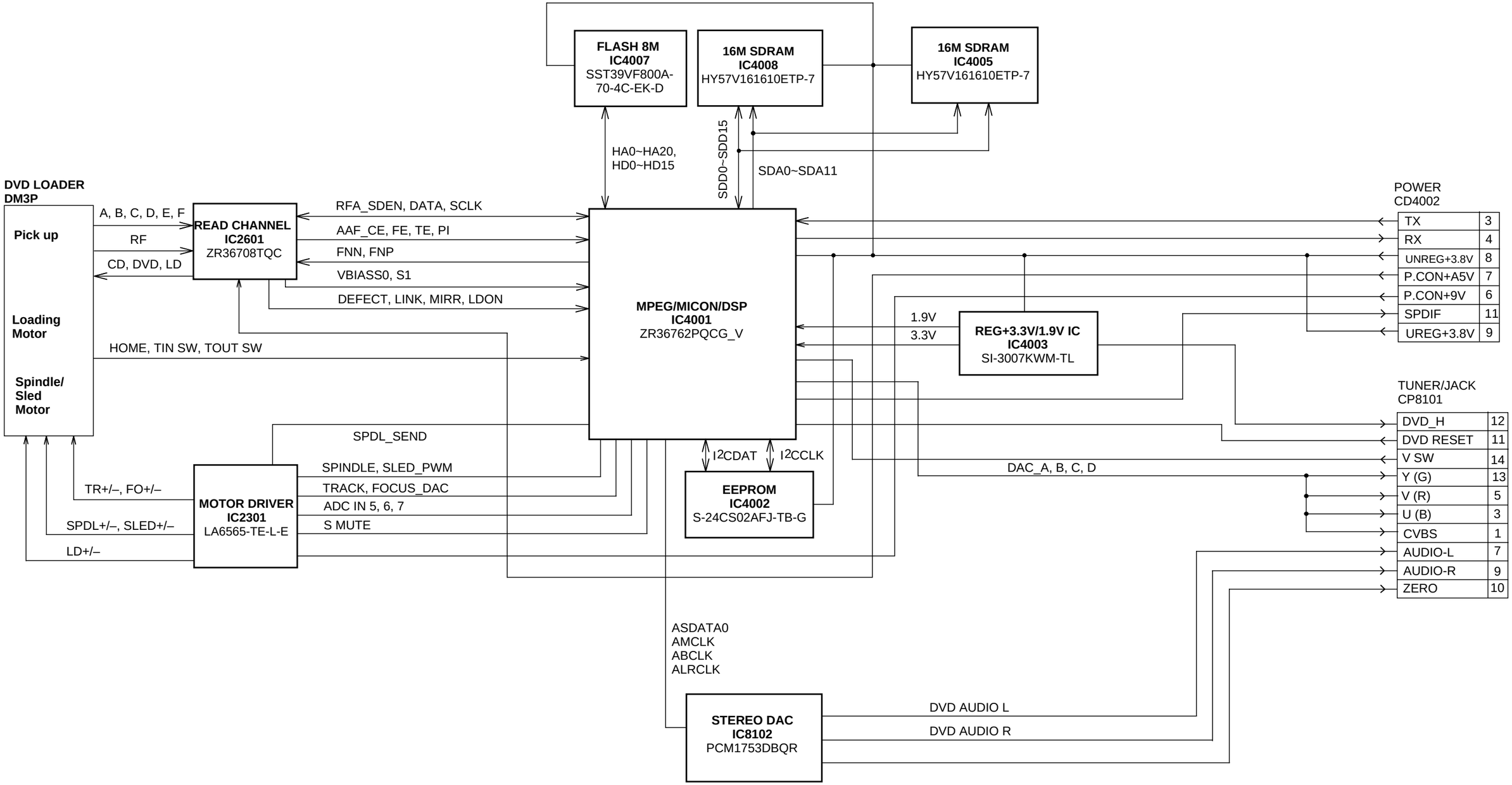
Fig. 1-1-B

ELECTRICAL ADJUSTMENTS

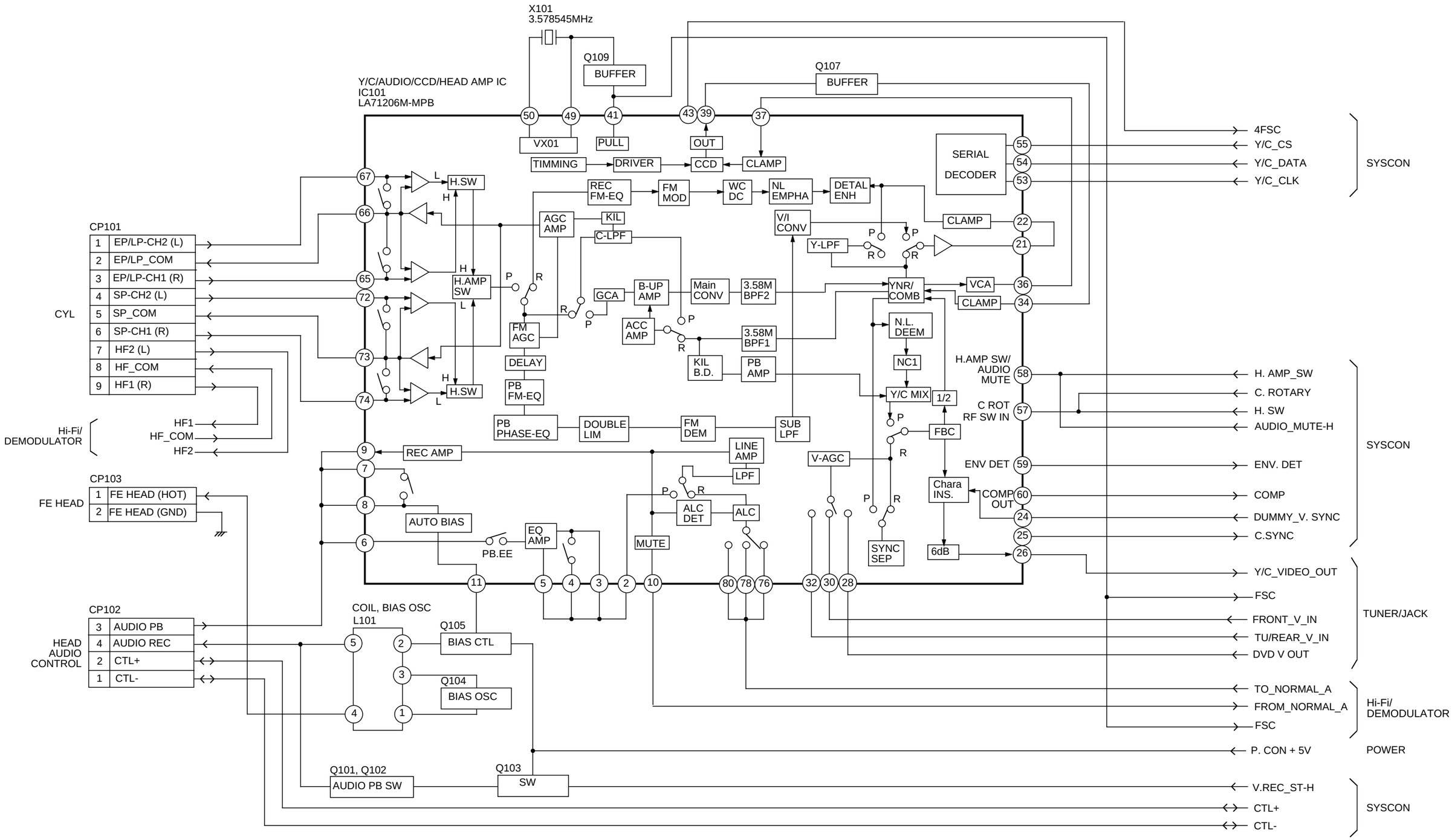
2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



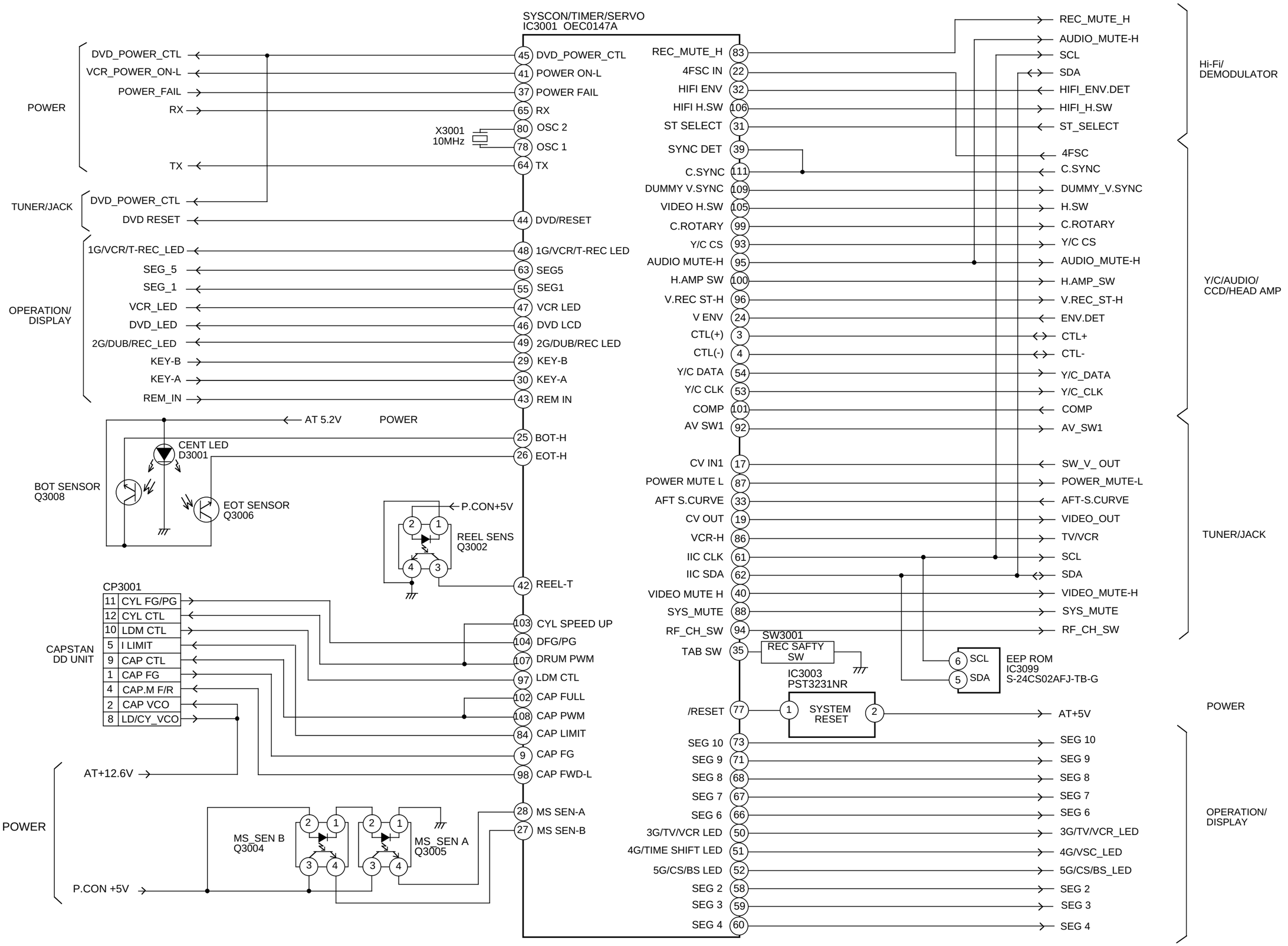
DVD BLOCK DIAGRAM



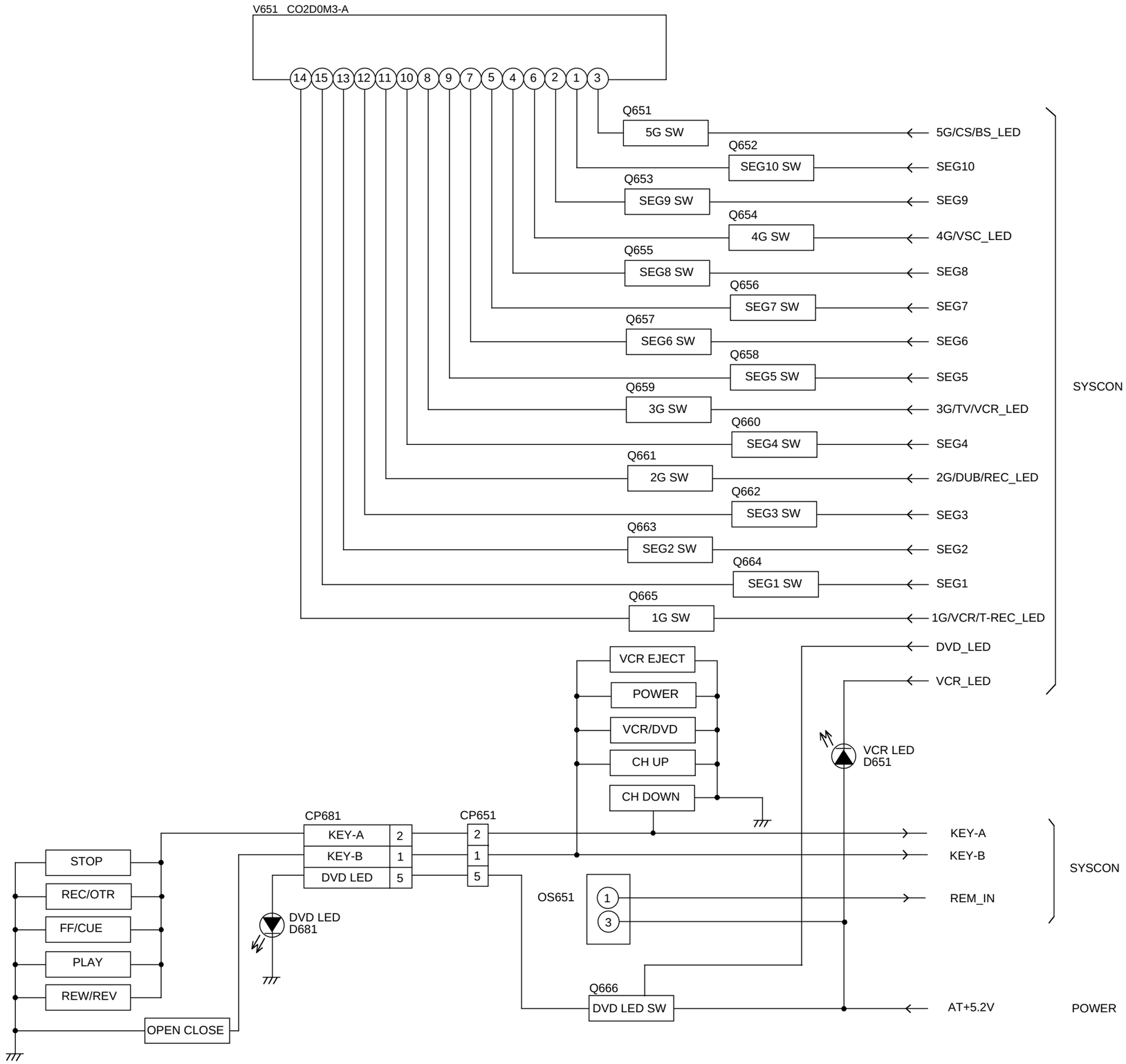
Y/C/AUDIO/CCD/HEAD AMP BLOCK DIAGRAM



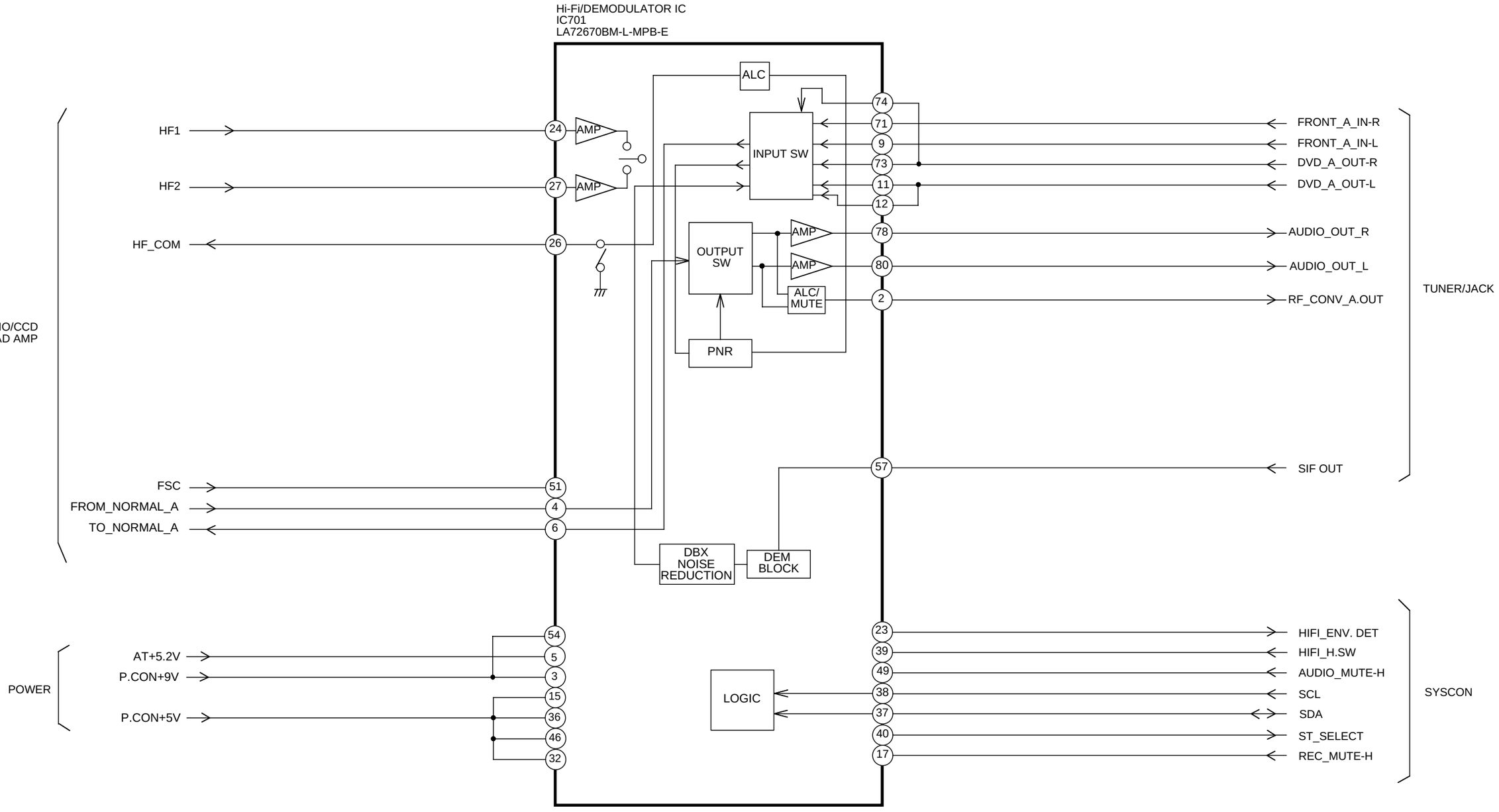
SYSCON CONTROL BLOCK DIAGRAM



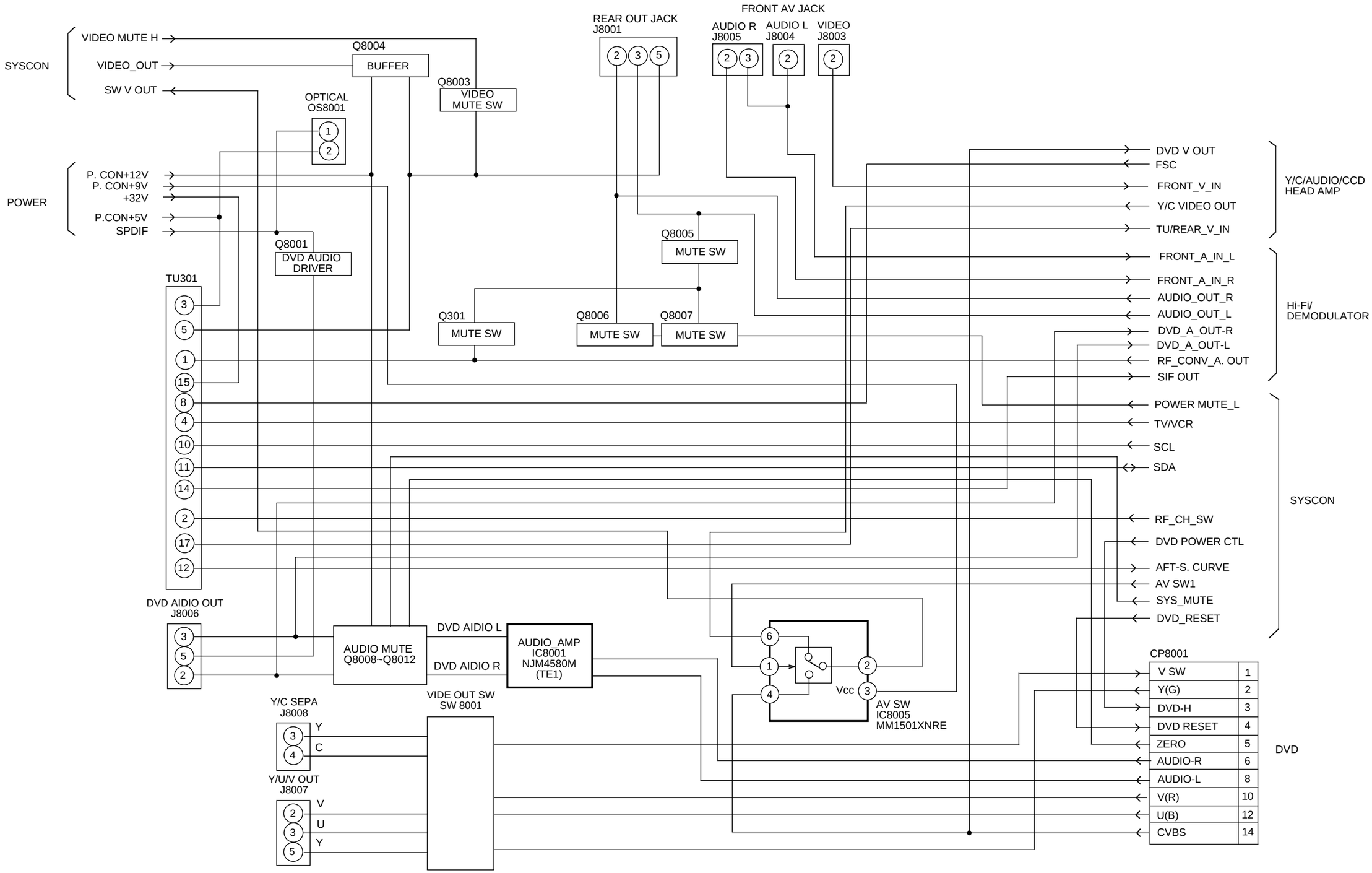
OPERATION/DISPLAY BLOCK DIAGRAM



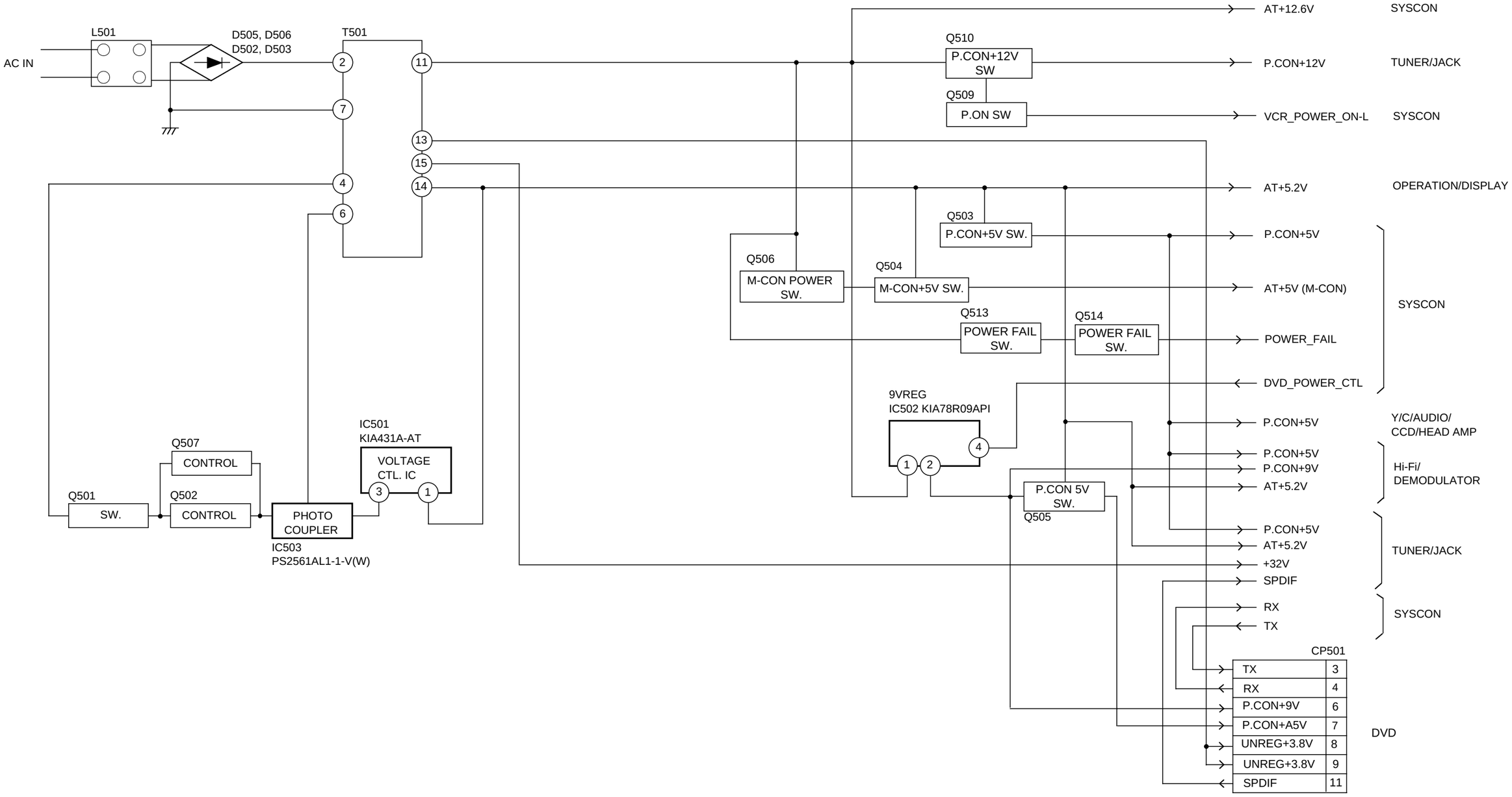
Hi-Fi/DEMODULATOR BLOCK DIAGRAM



TUNER/JACK BLOCK DIAGRAM

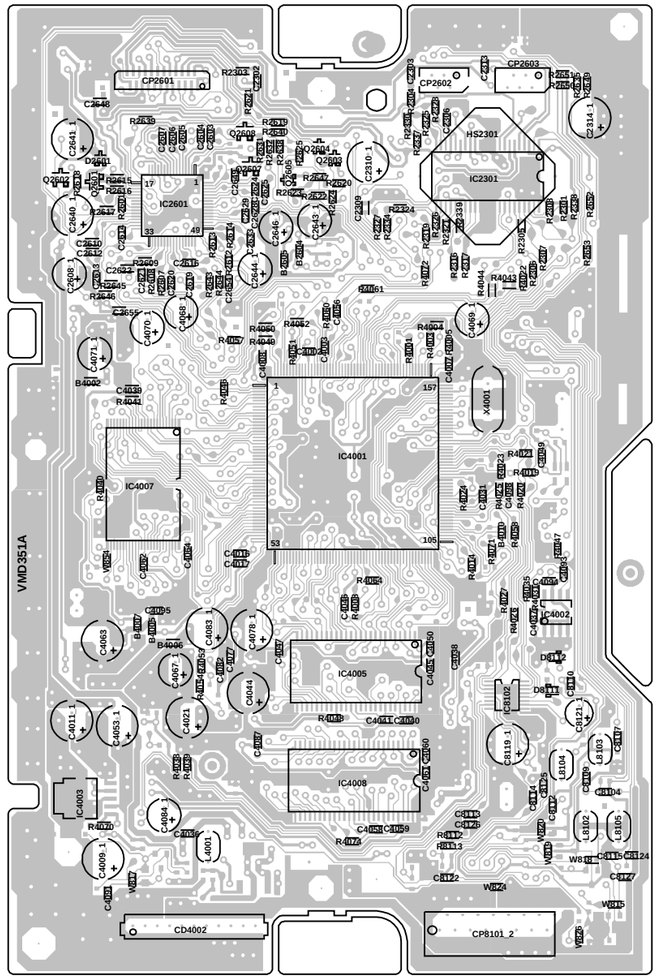


POWER BLOCK DIAGRAM

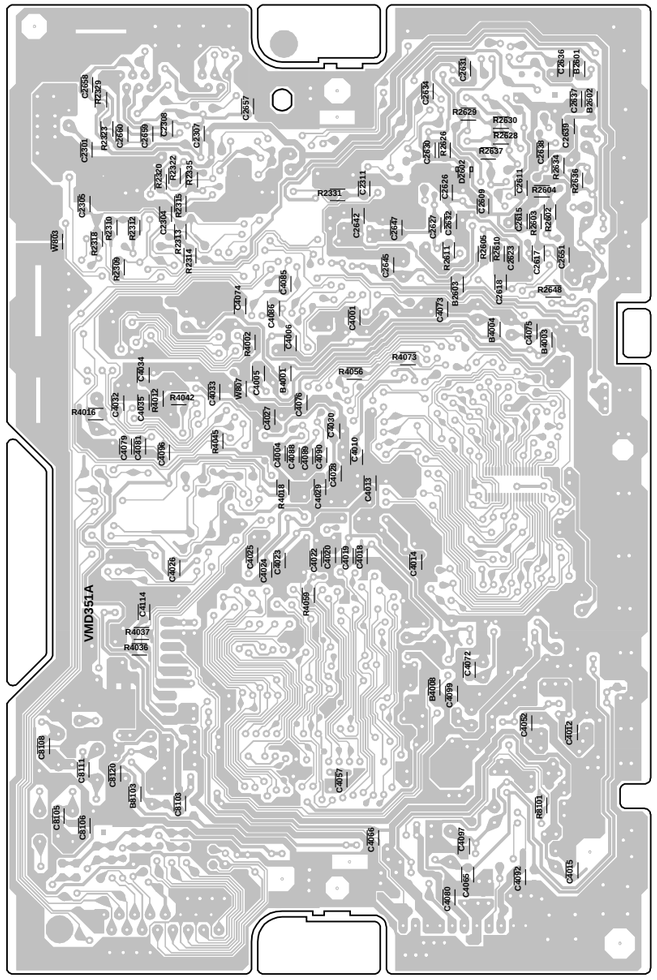


PRINTED CIRCUIT BOARDS

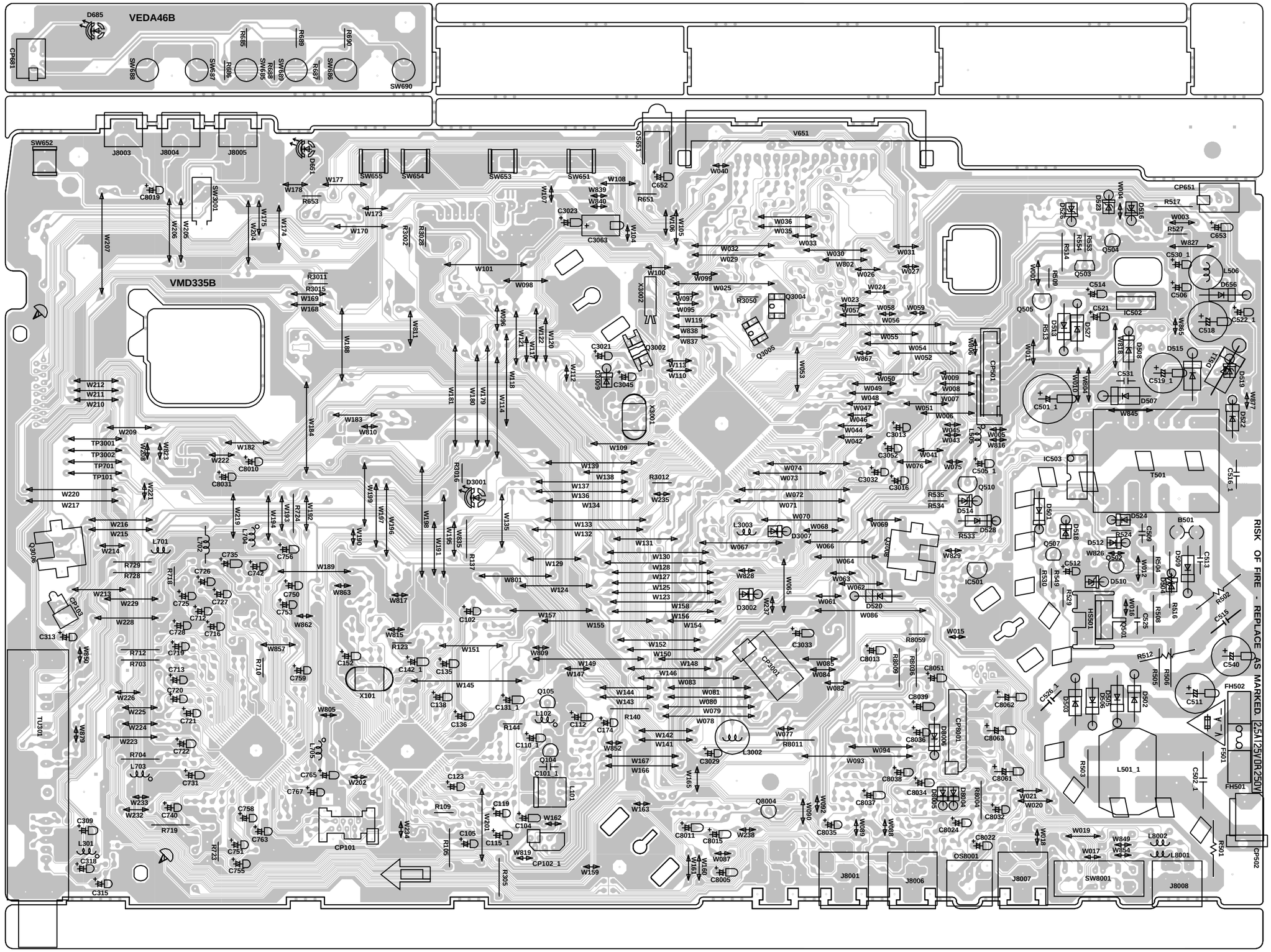
DVD (TOP SIDE)



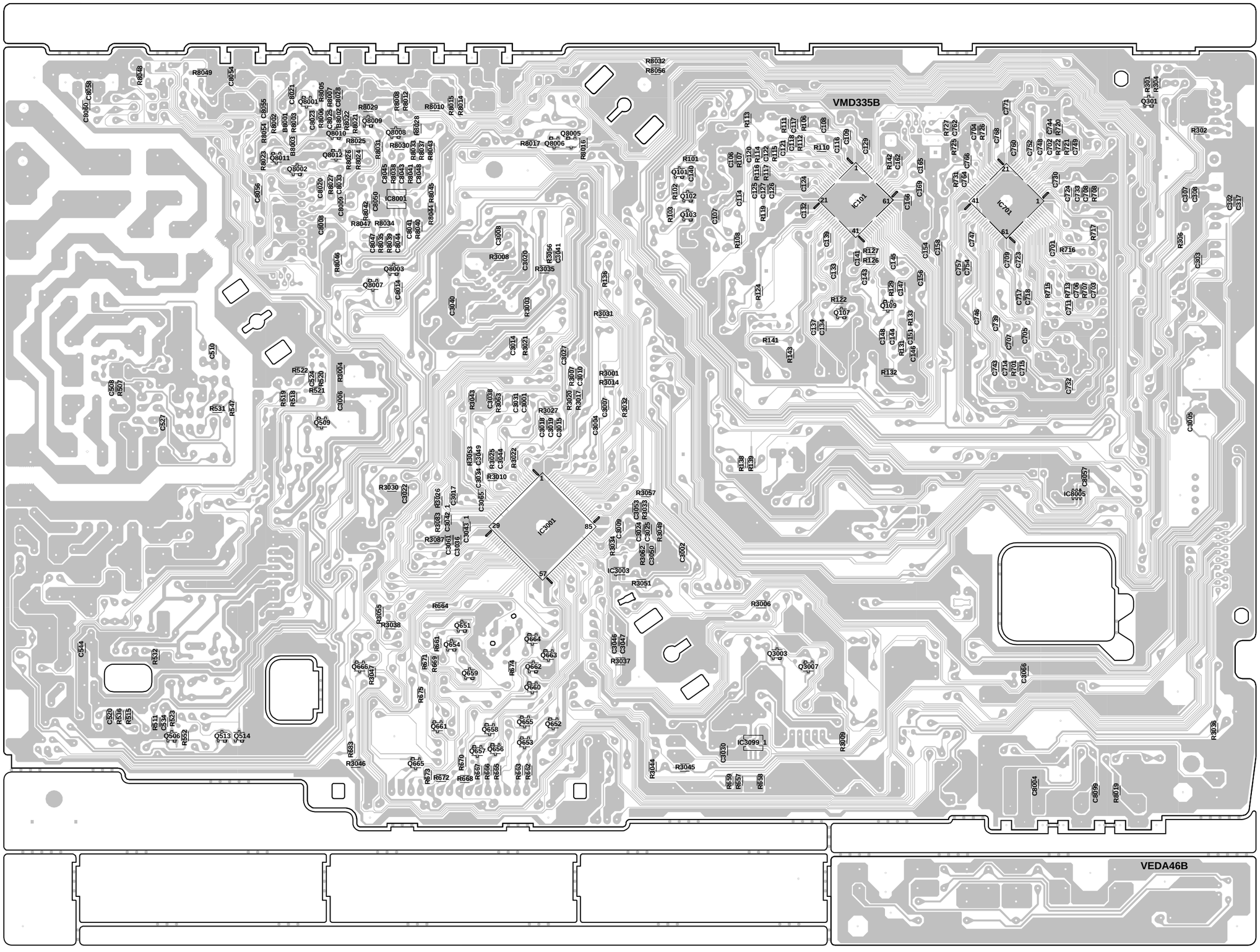
DVD (BOTTOM SIDE)



PRINTED CIRCUIT BOARDS
VCR/OPERATION (INSERTED PARTS)
SOLDER SIDE



PRINTED CIRCUIT BOARDS
VCR (CHIP MOUNTED PARTS)
SOLDER SIDE



MPEG/MICON/DSP SCHEMATIC DIAGRAM

(DVD PCB)

MPEG/MICON/DSP
IC4001
ZR36762PQCG_V

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

DIGITAL AUDIO SIGNAL(PB)

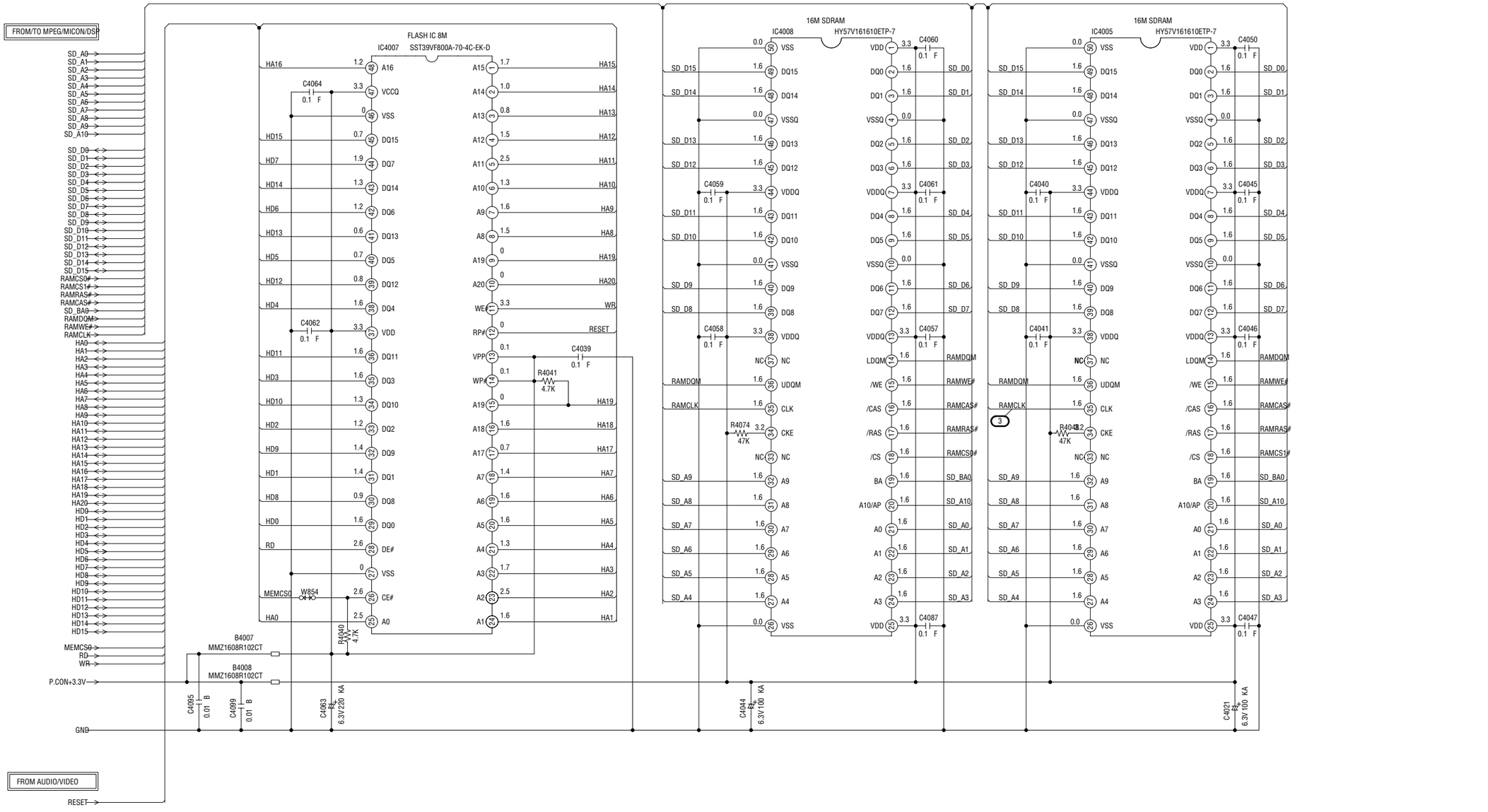
PCB130
VMD351

G-1

G-2

MEMORY SCHEMATIC DIAGRAM

(DVD PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB130
VMD351

RF AMP/DSP SCHEMATIC DIAGRAM

(DVD PCB)

DM3P

FROM/TO LOADER

CP2601
09-5000-024-001-001

1	GND
2	VCC
3	C
4	B
5	SW1(DVD/CD)
6	E
7	SW2(L/H)
8	F
9	A
10	D
11	Vref
12	VR(DVD)
13	VR COM
14	VR(CD)
15	GND
16	LD(CD)
17	PD
18	LD(DVD)
19	GND
20	NC
21	T DRV
22	T RTN
23	F DRV
24	F RTN

CP2602
00_6232_005_006_800

5	LD-
4	LD+
3	OPEN
2	GND(D)
1	CLOSE

CP2603
00_6232_006_006_800

6	SW(GND)
5	LIMIT SW
4	SLD-
3	SLD+
2	SP1-
1	SP1+

READ CHANNEL IC
IC2601
ZR36708TQC

MOTOR DRIVE IC
LA6565
IC2301

FROM/TO MPEG/MICON/DSP

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

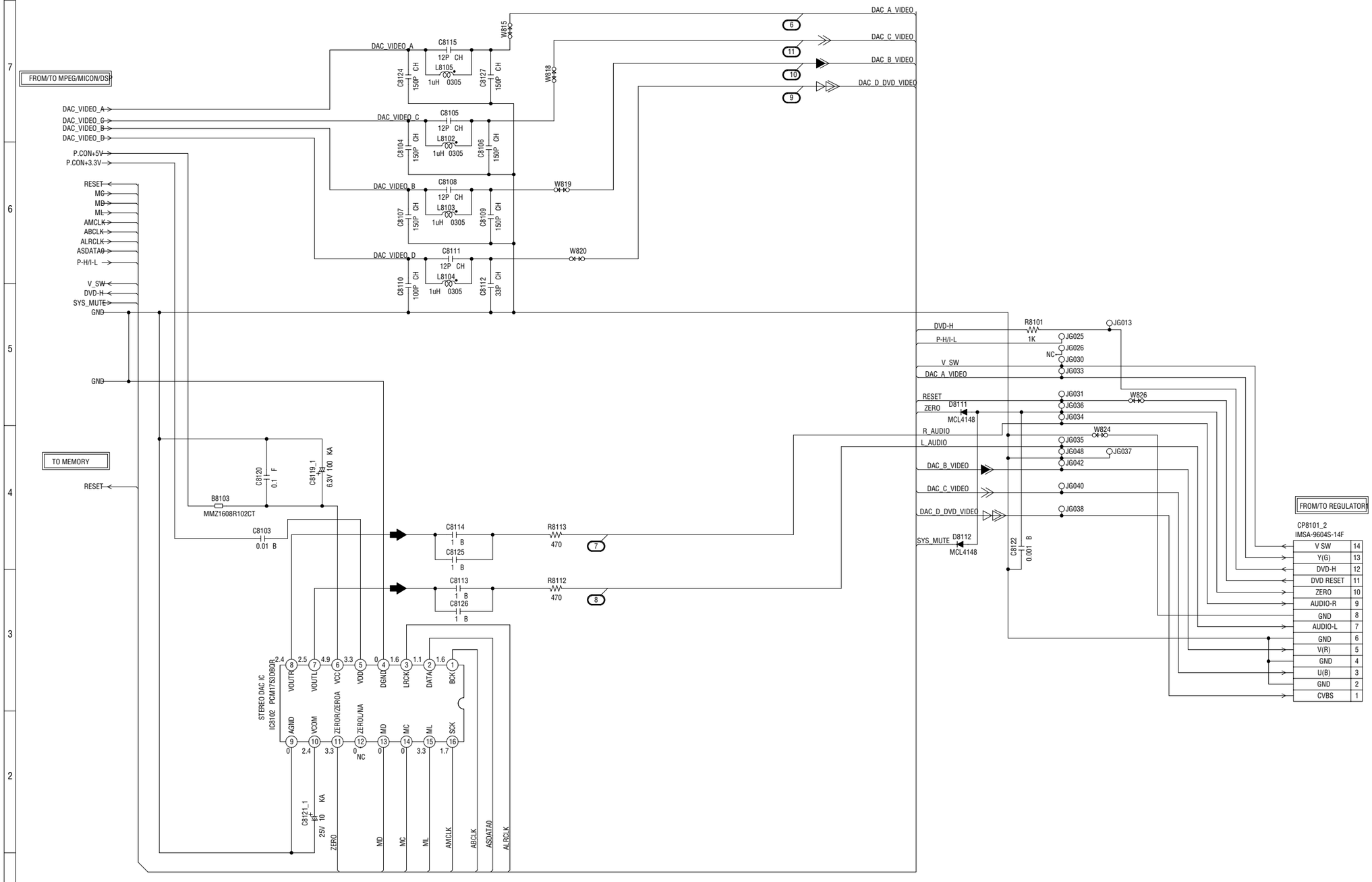
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

PCB130
VMD351

AUDIO/VIDEO SCHEMATIC DIAGRAM

(DVD PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

◀ R.SIGNAL+ COMPONENT SIGNAL(U)

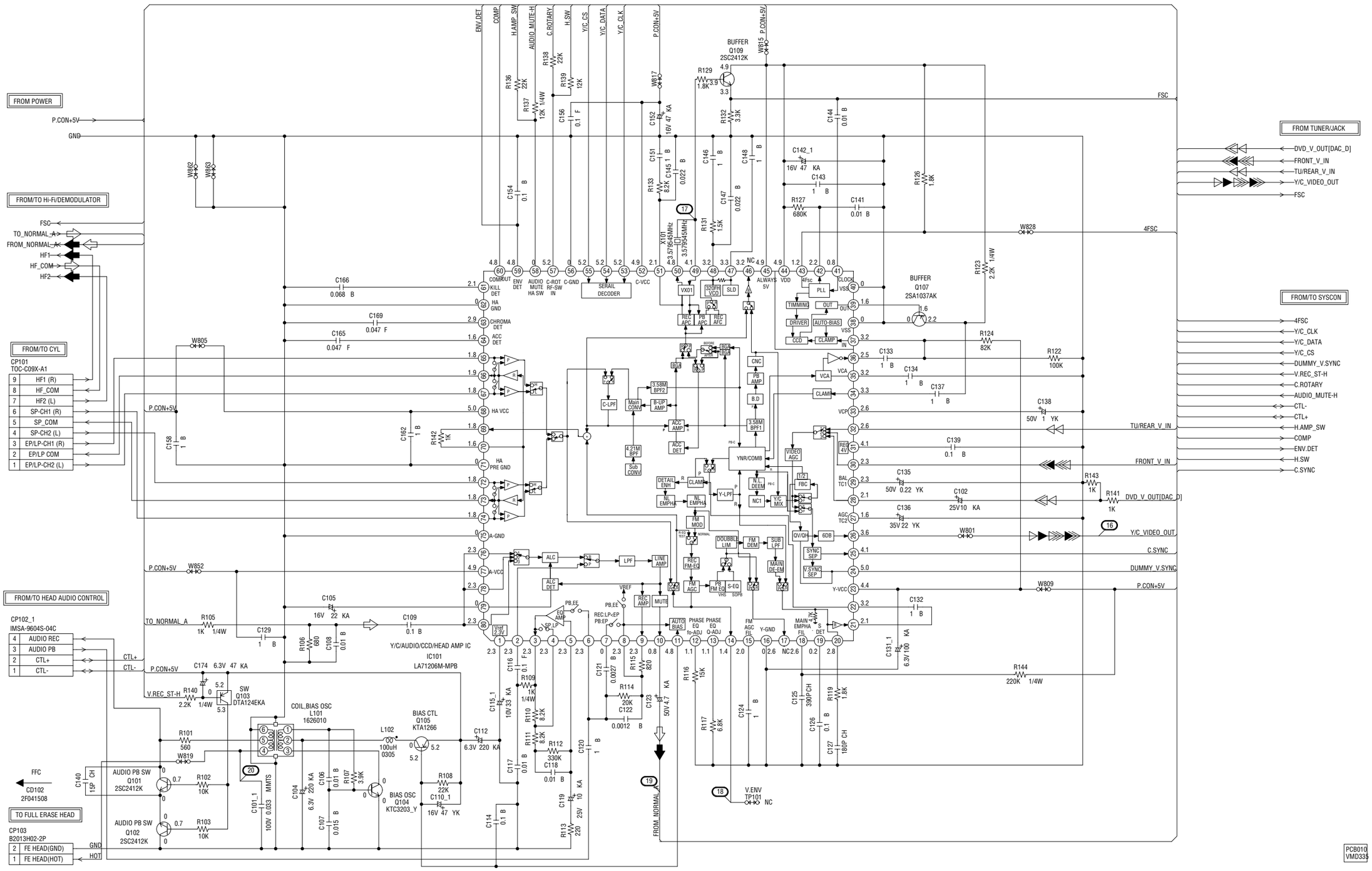
≪ B.SIGNAL+ COMPONENT SIGNAL(V)

⋘⋘ PLAYBACK VIDEO SIGNAL

⬅ AUDIO SIGNAL(PB)

Y/C/AUDIO/CCD/HEAD AMP SCHEMATIC DIAGRAM

(VCR PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

AUDIO SIGNAL(REC)
AUDIO SIGNAL(PB)
PLAYBACK COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL
PLAYBACK VIDEO SIGNAL
RECORD COLOR SIGNAL
RECORD LUMINANCE SIGNAL
TUNER VIDEO SIGNAL

SYSCON SCHEMATIC DIAGRAM
(VCR PCB)

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

RECORD LUMINANCE SIGNAL
RECORD COLOR SIGNAL
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL

SYSCON/TIMER/SERVO IC
IC3001
OEC0147A

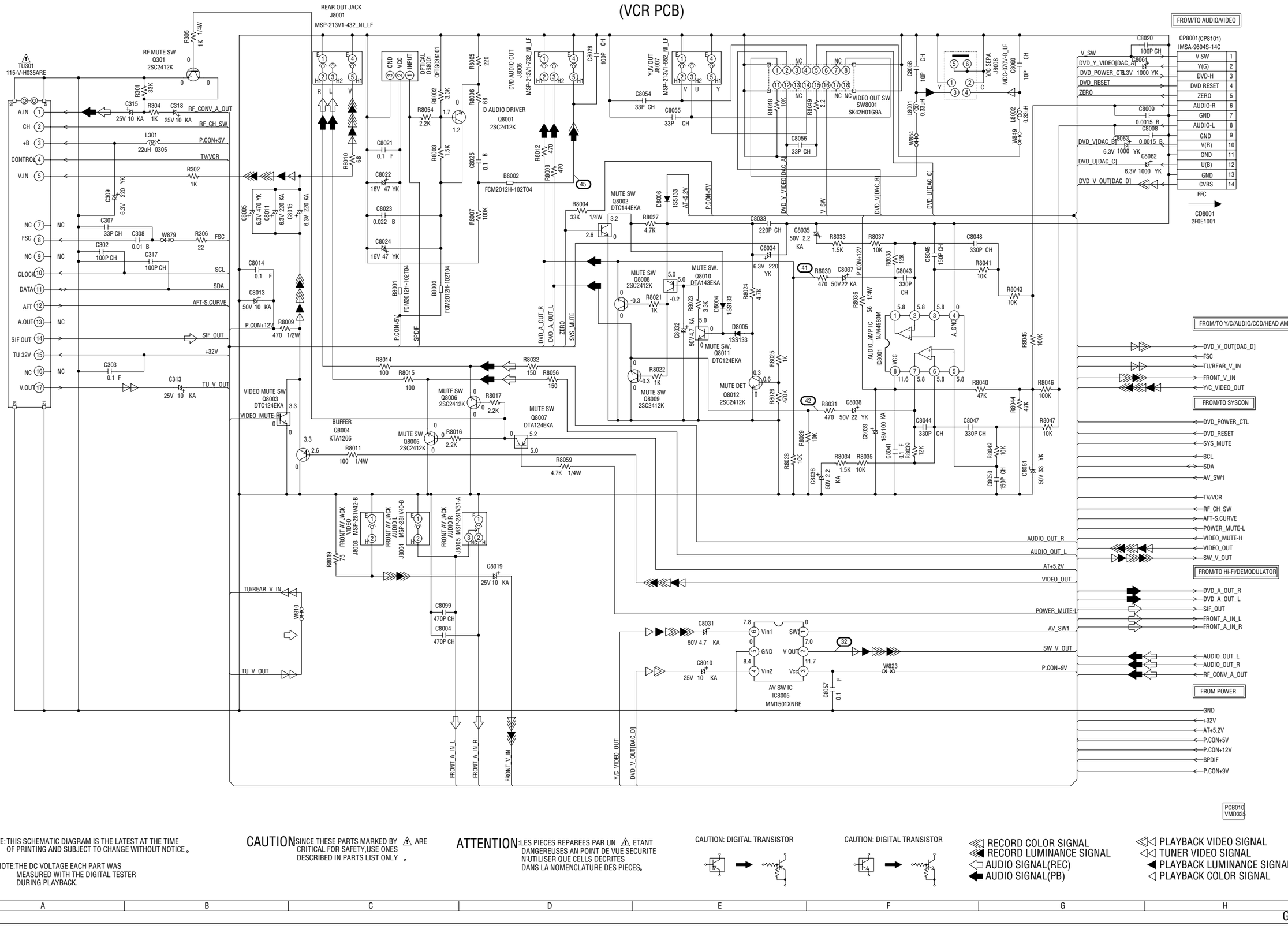
SYSTEM RESET IC
PST3231NR
IC3003

EEP ROM IC
S-24C32AFJ-TB-G
IC3099_1

PCB010
VMD335

TUNER/JACK SCHEMATIC DIAGRAM

(VCR PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION : LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

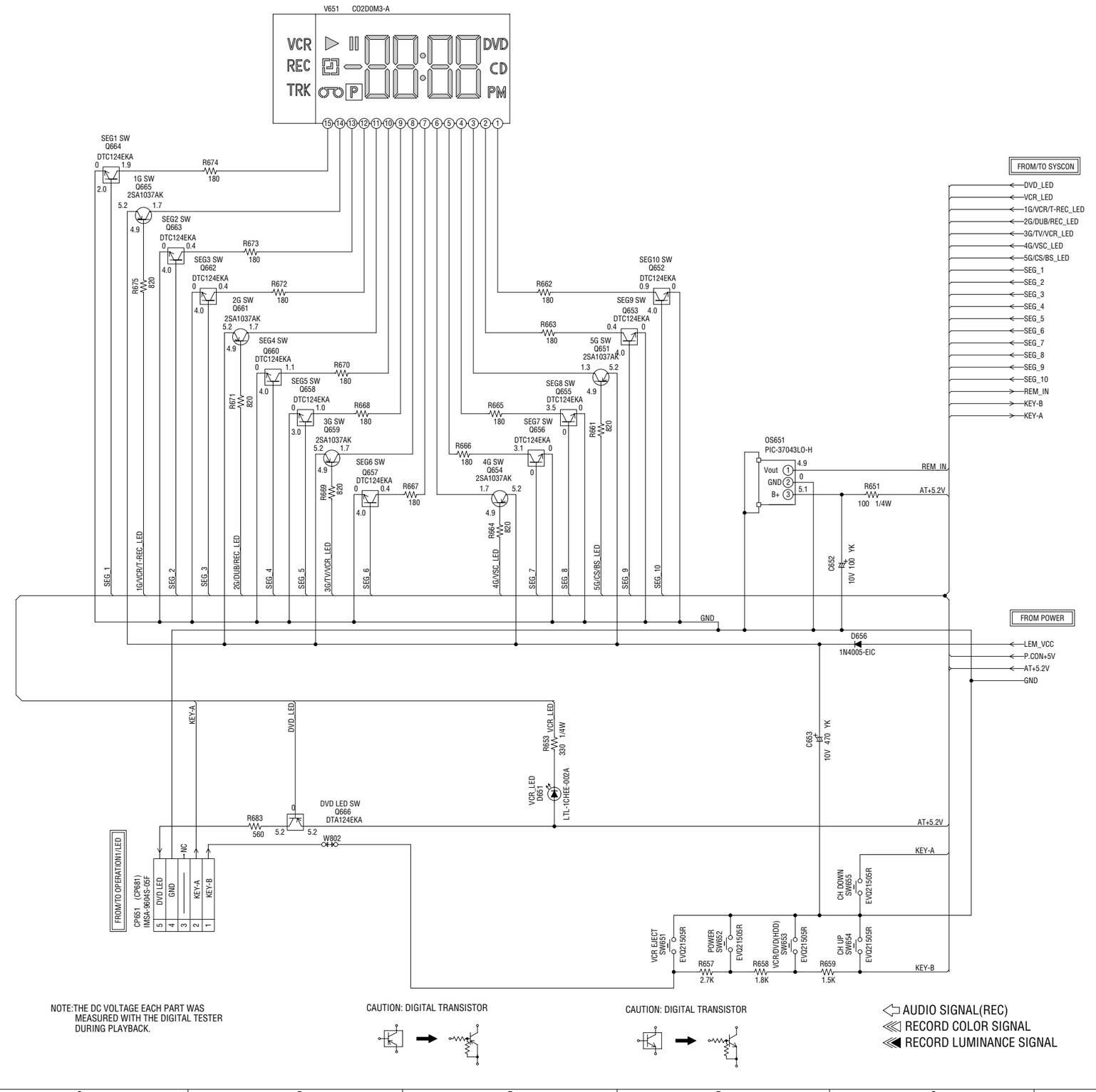
CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

- RECORD COLOR SIGNAL
- RECORD LUMINANCE SIGNAL
- AUDIO SIGNAL(REC)
- AUDIO SIGNAL(PB)
- PLAYBACK VIDEO SIGNAL
- TUNER VIDEO SIGNAL
- PLAYBACK LUMINANCE SIGNAL
- PLAYBACK COLOR SIGNAL

OPERATION/DISPLAY SCHEMATIC DIAGRAM

(VCR PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR

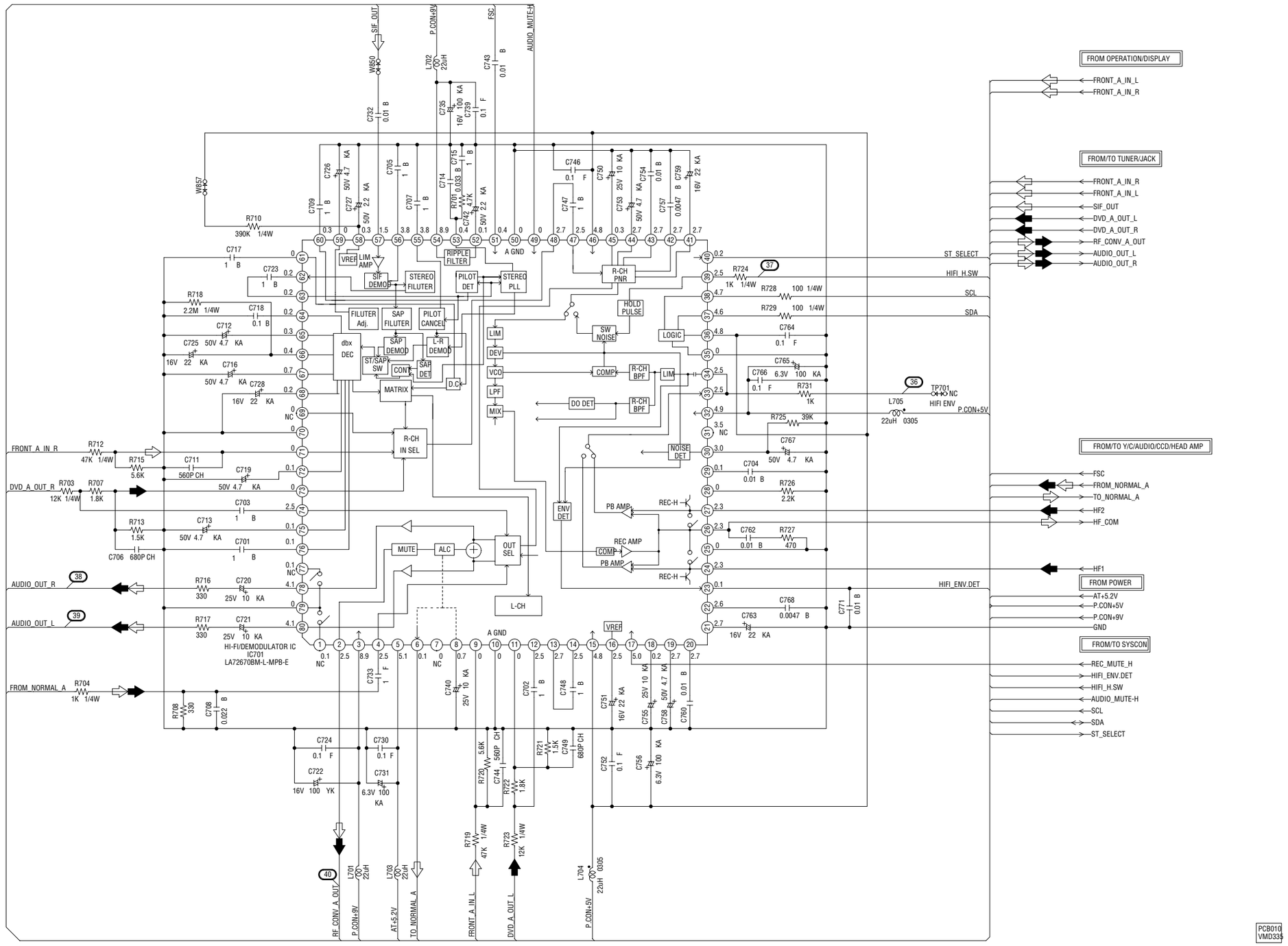
⇦ AUDIO SIGNAL(REC)

⇚ RECORD COLOR SIGNAL

◀ RECORD LUMINANCE SIGNAL

Hi-Fi/DEMODULATOR SCHEMATIC DIAGRAM

(VCR PCB)



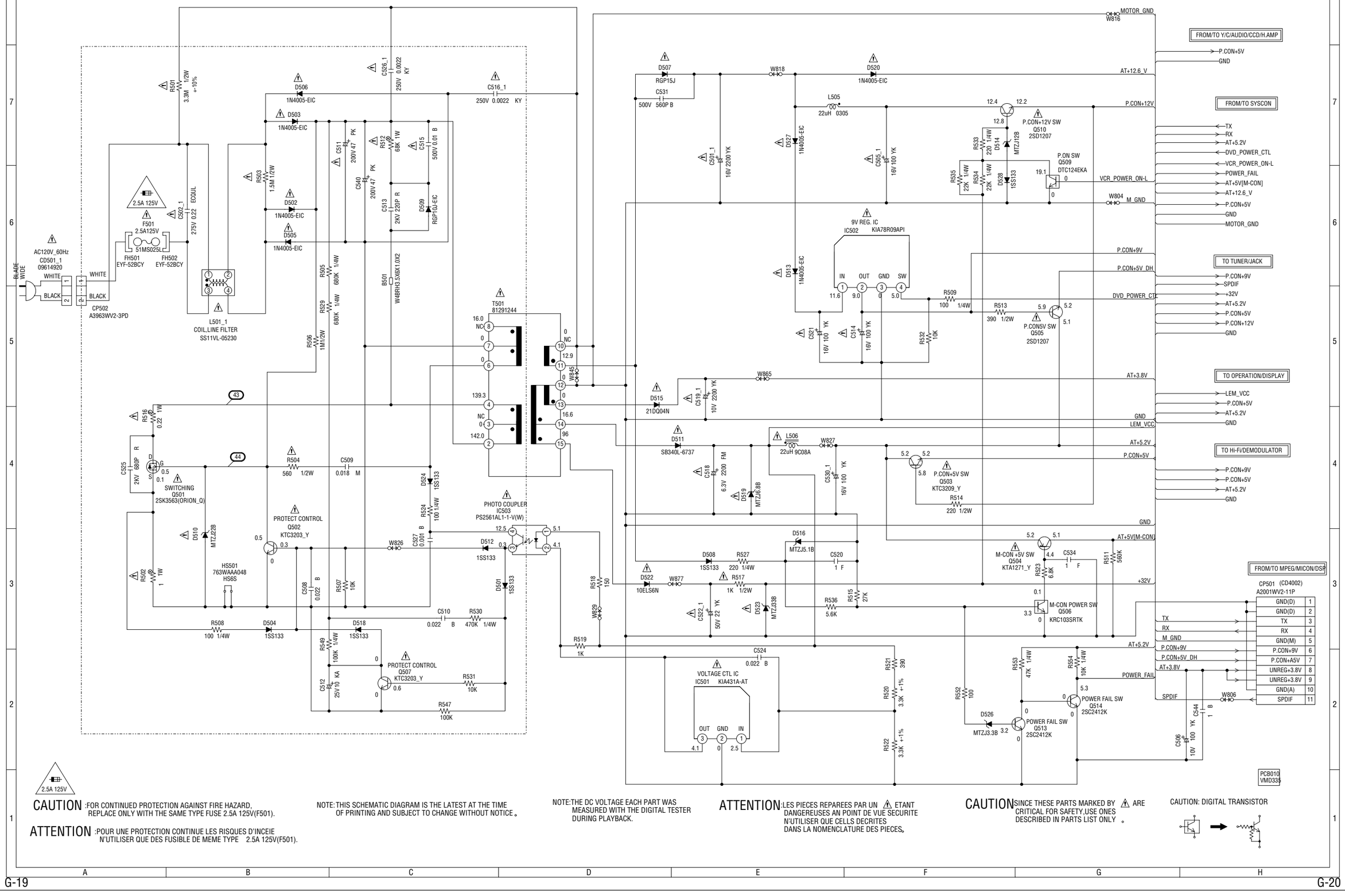
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

⇦ AUDIO SIGNAL(REC)
⬅ AUDIO SIGNAL(PB)

POWER SCHEMATIC DIAGRAM

(VCR PCB)



2.5A 125V

CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 2.5A 125V(F501).

ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 2.5A 125V(F501).

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

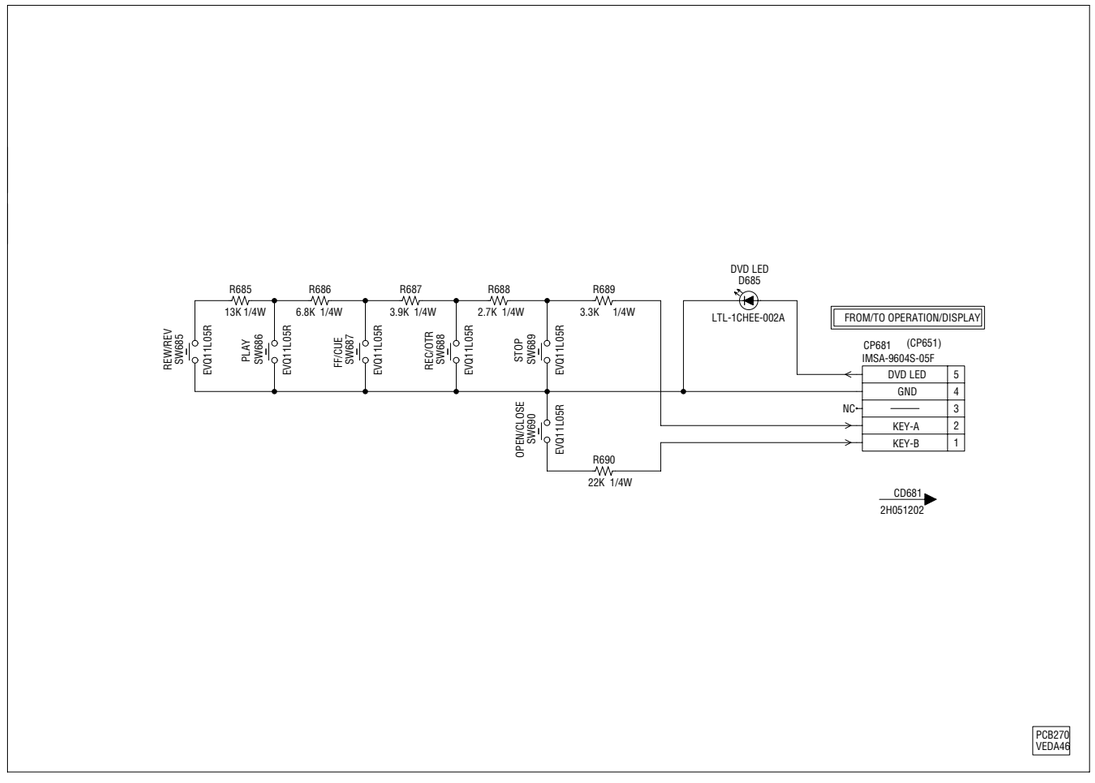
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR

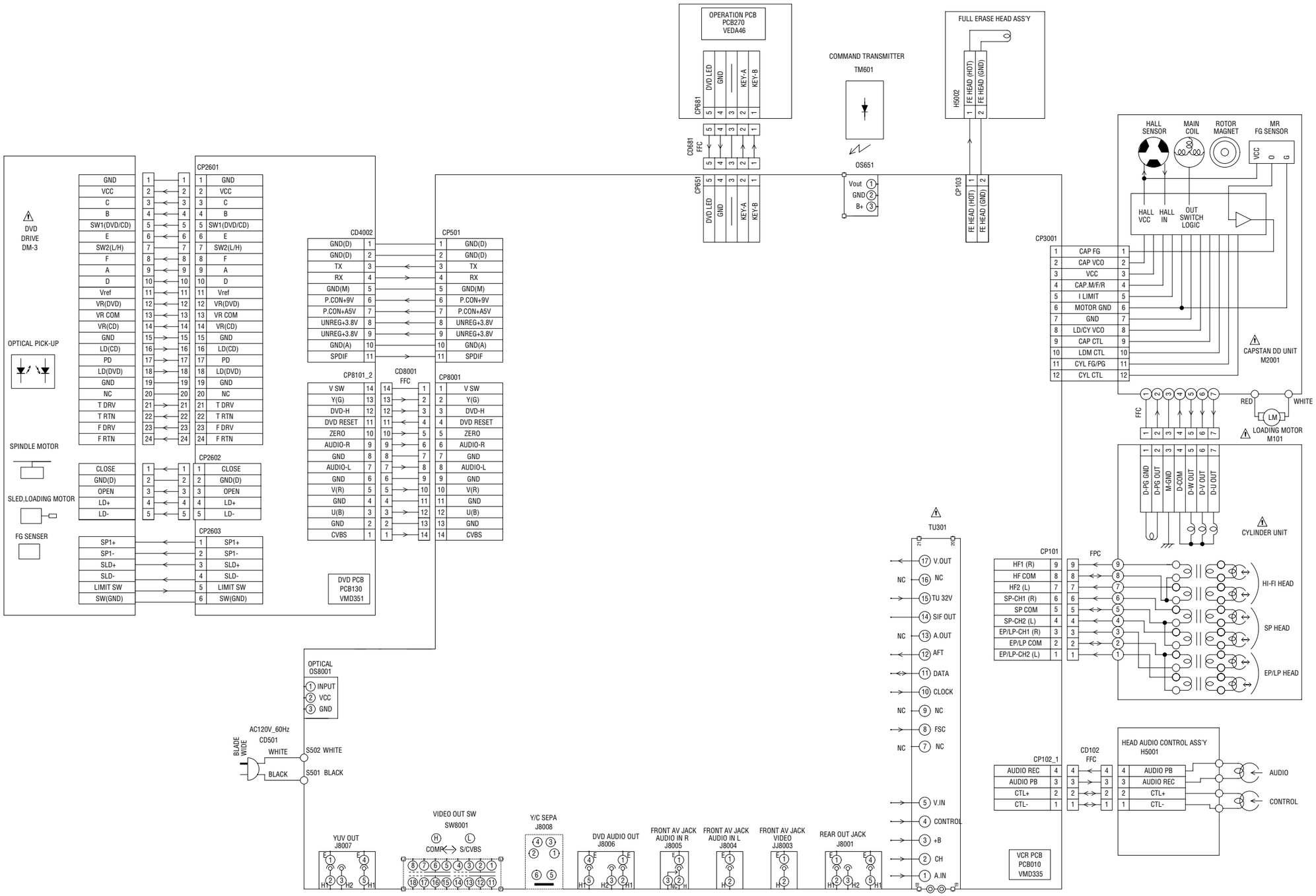
OPERATION/LED SCHEMATIC DIAGRAM
(OPERATION PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

INTERCONNECTION DIAGRAM



NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

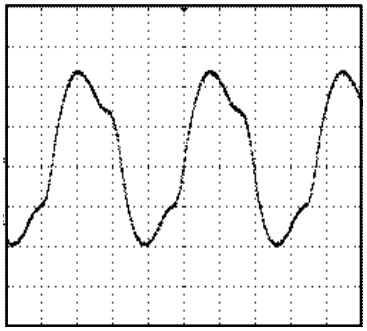
CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

WAVEFORMS

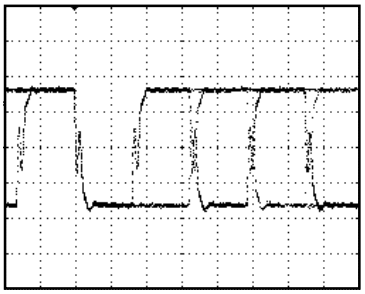
MPEG/MICON/DSP

10ns
1.0V



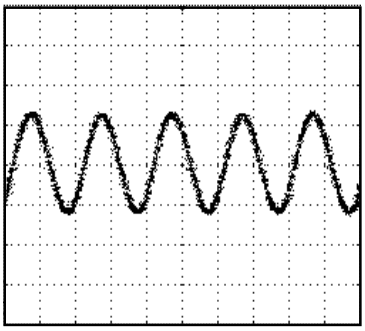
①

100ns
100mV



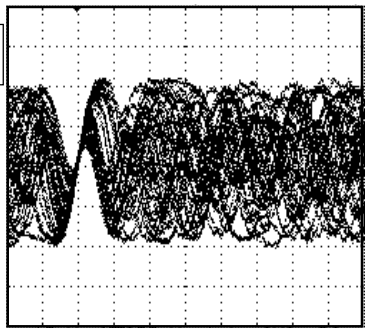
②

200µs
500mV



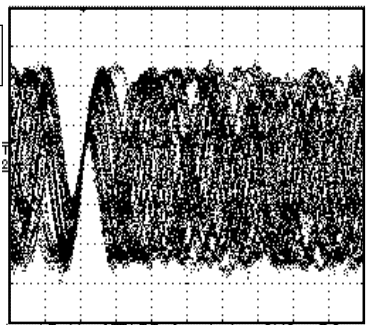
③

200ns
200mV



④

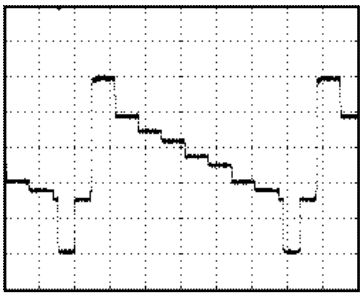
200ns
100mV



⑤

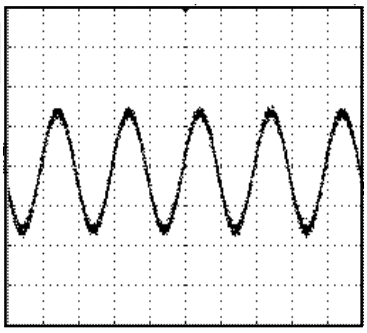
AUDIO/VIDEO

10µs
200mV



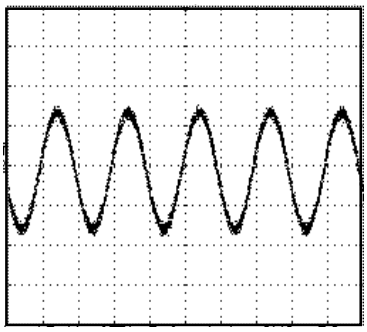
⑥

500µs
1.0V



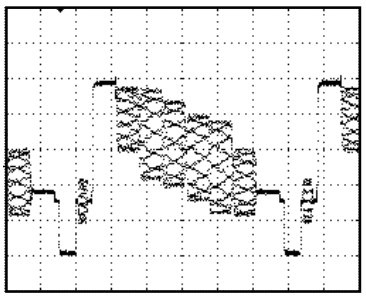
⑦

500µs
1.0V



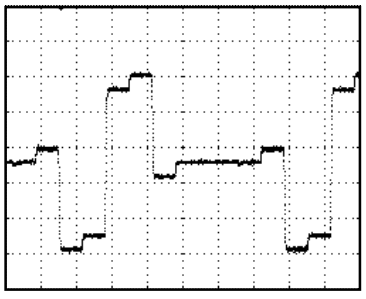
⑧

10µs
200mV



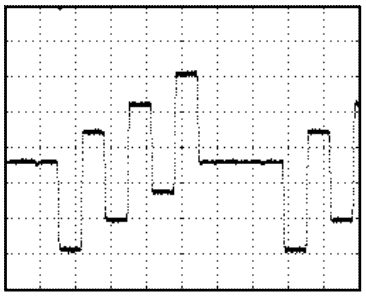
⑨

10µs
100mV



⑩

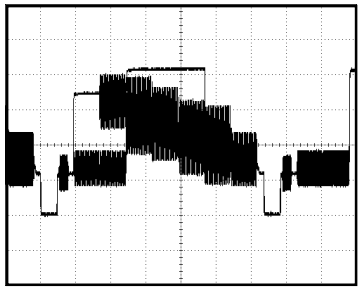
10µs
100mV



⑪

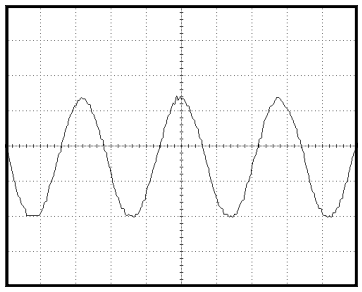
Y/C/AUDIO/CCD/HEAD AMP

PB
10µs
500mV



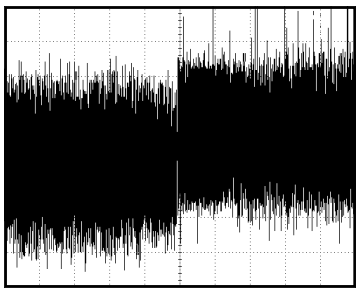
⑯

PB
100ns
100mV



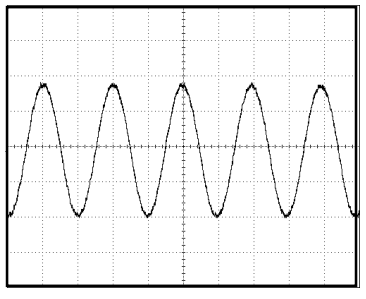
⑰

PB
1ms
100mV



⑱

PB
200ms
500mV



⑲

MEMORY

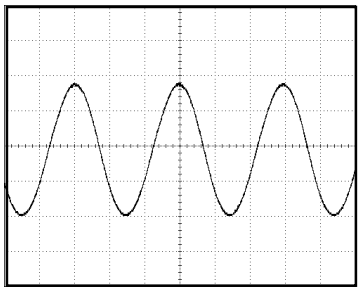
RF AMP/DSP

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

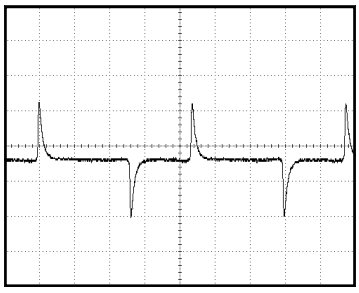
REC
5µs
20V

⑳



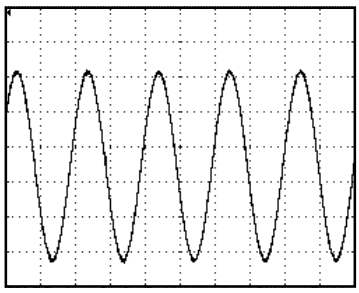
PB
5ms
500mV

㉕



PB
500µs
200mV

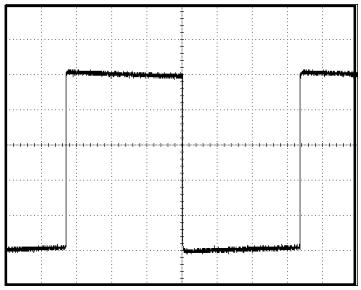
㊳



SYSCON

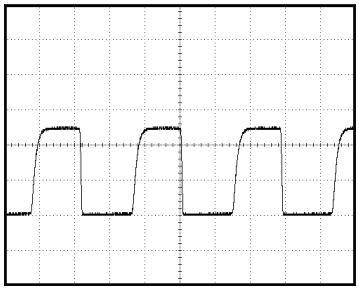
PB
5ms
1.0V

㉑



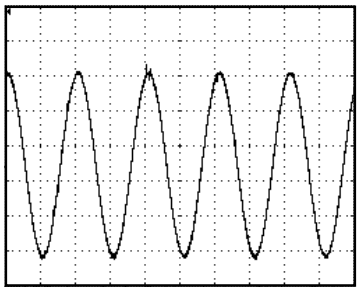
PB
5ms
2.0V

㉗



PB
500µs
200mV

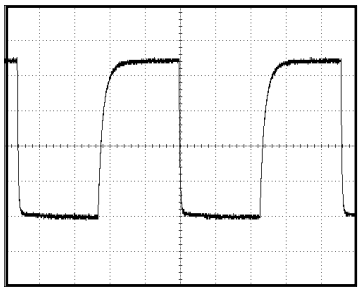
㊴



TUNER/JACK

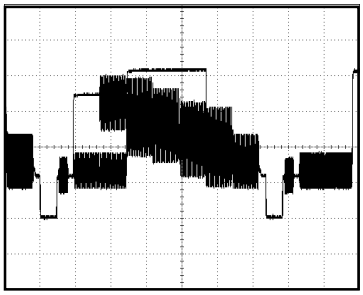
PB
200µs
1.0V

㉒



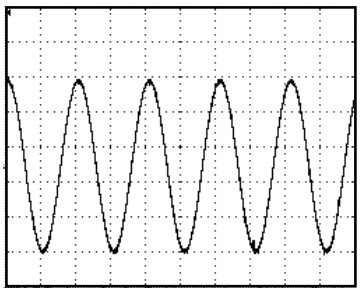
PB
10µs
200mV

㉜



PB
500µs
200mV

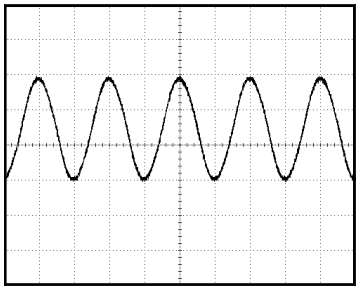
㊵



Hi-Fi/DEMODULATOR

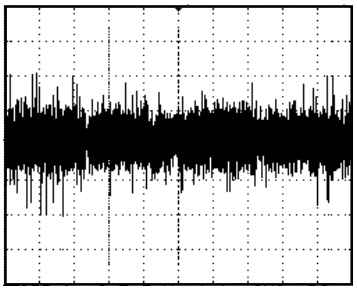
POWER ON
50ns
1.0V

㉓



PB
10ms
1.0V

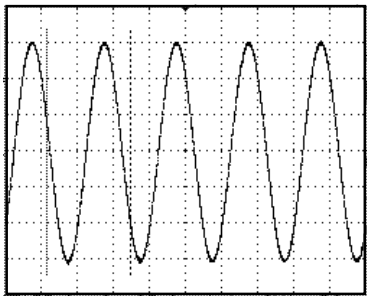
㊱



TUNER/JACK

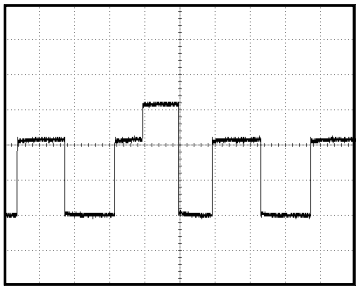
PB
500µs
100mV

㊶



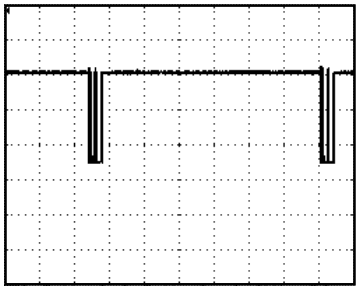
PB
500µs
1.0V

㉔



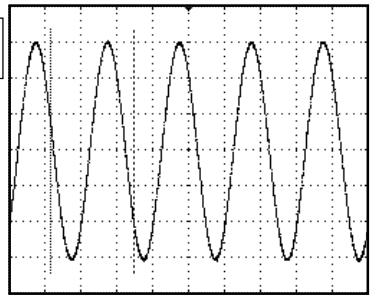
PB
1ms
2.0V

㊲



PB
500µs
100mV

㊷



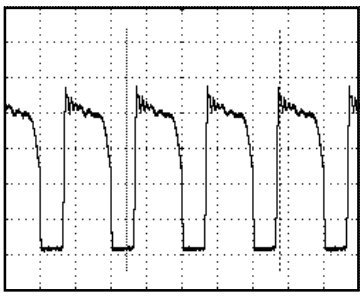
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

POWER

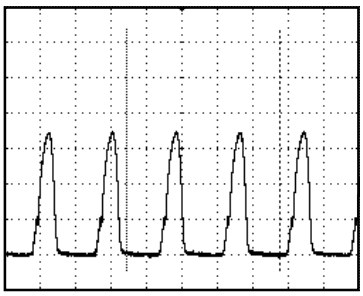
PB
5µs
500mV

43



PB
5µs
5.0V

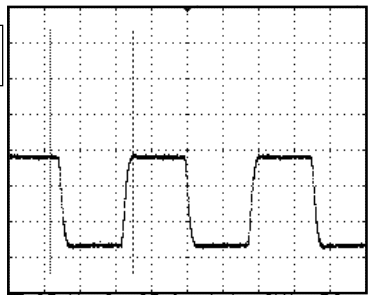
44



TUNER/JACK

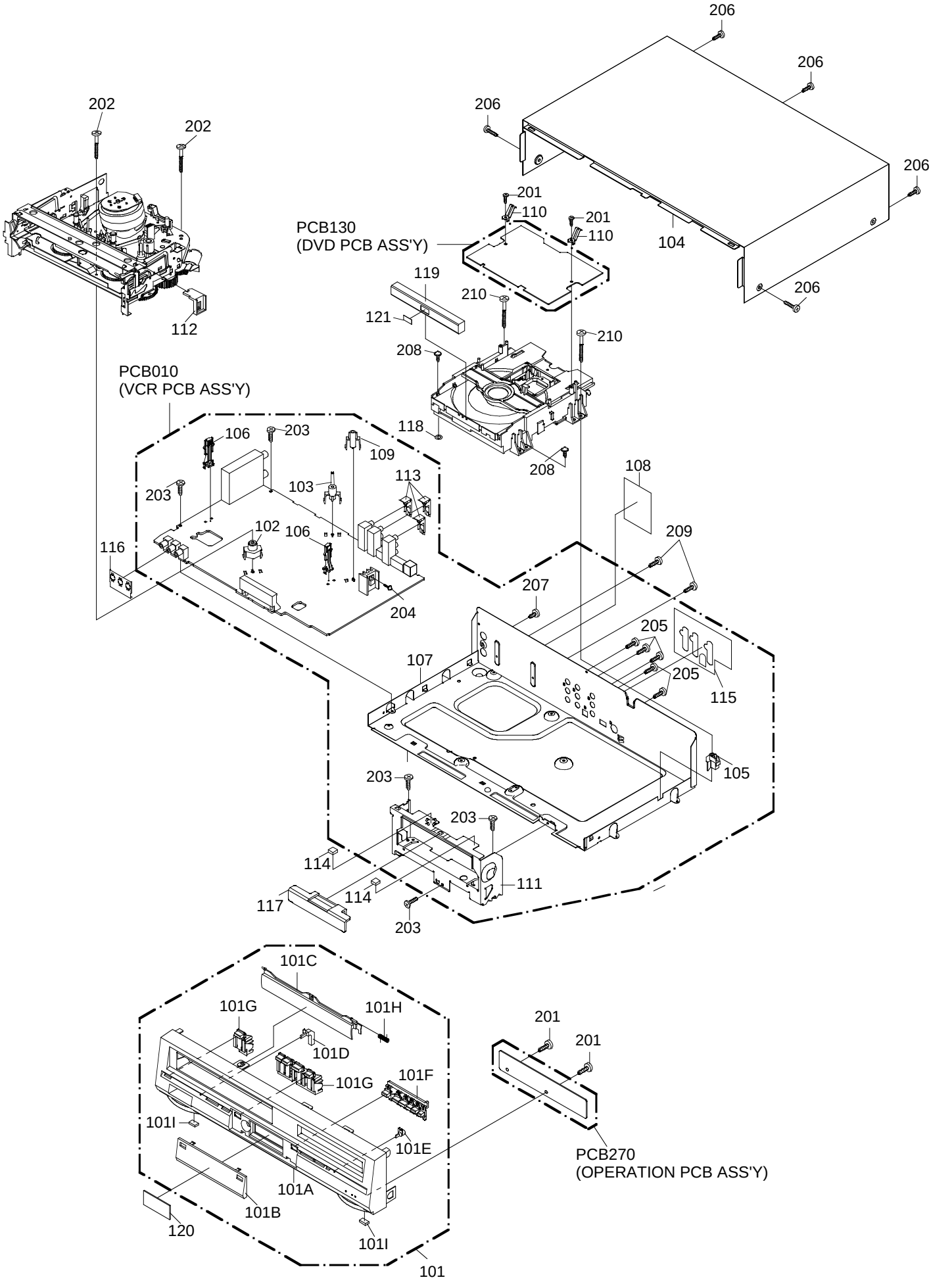
PB
200ns
20mV

45

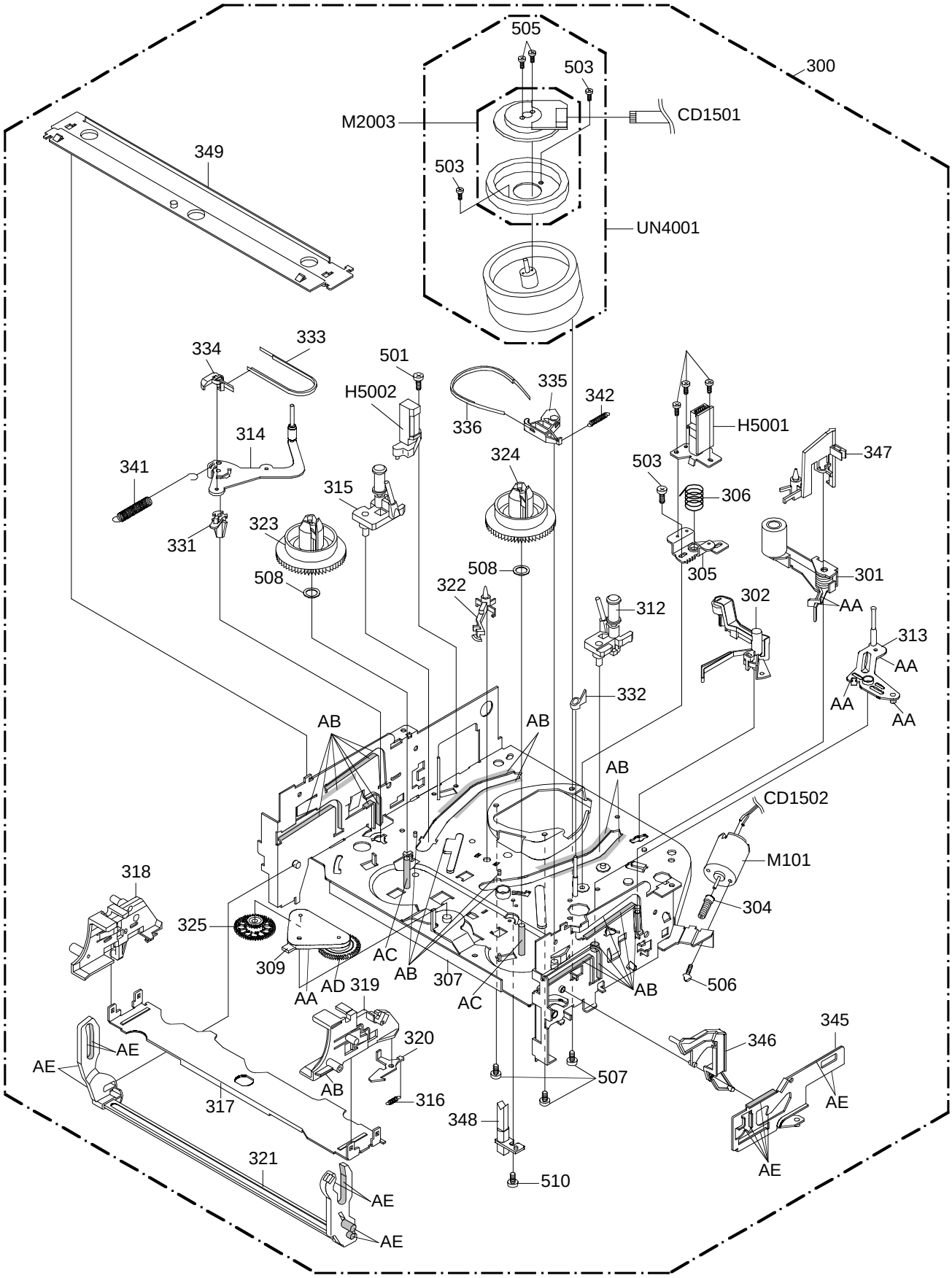


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



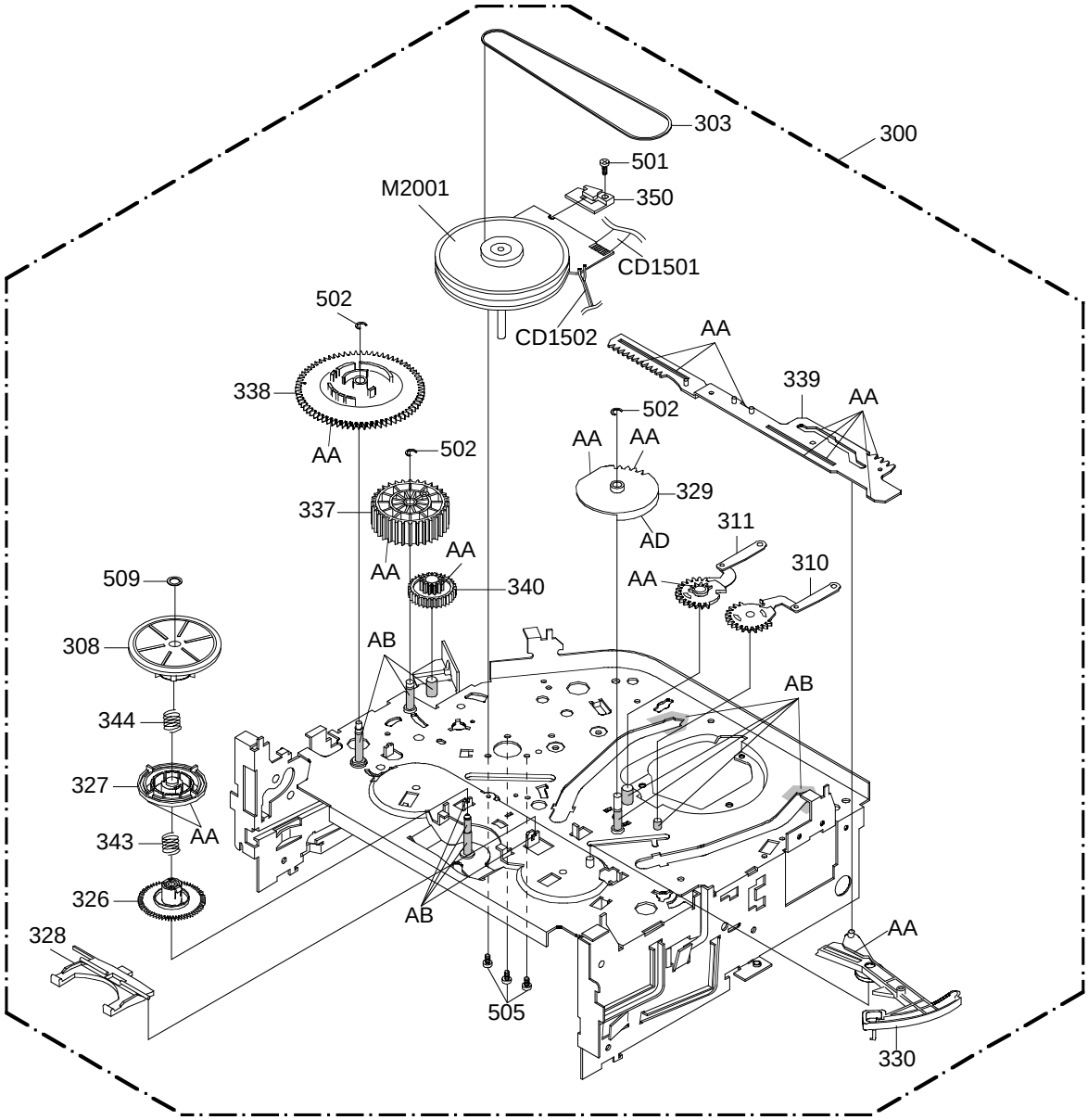
CHASSIS EXPLODED VIEW (TOP VIEW)



CLASS	PART NO.	PART NAME	MARK
GREASE	Y315061000	G-555G	AA
	Y315071000	MG-33	AB
	Y31D011000	FG-84M	AC
	Y315041000	FL-721	AD
	Y315141000	G-313Y	AE

NOTE: Applying positions AA, AB, AC, AD and AE for the grease are displayed for this section. Check if the correct grease is applied for each position.

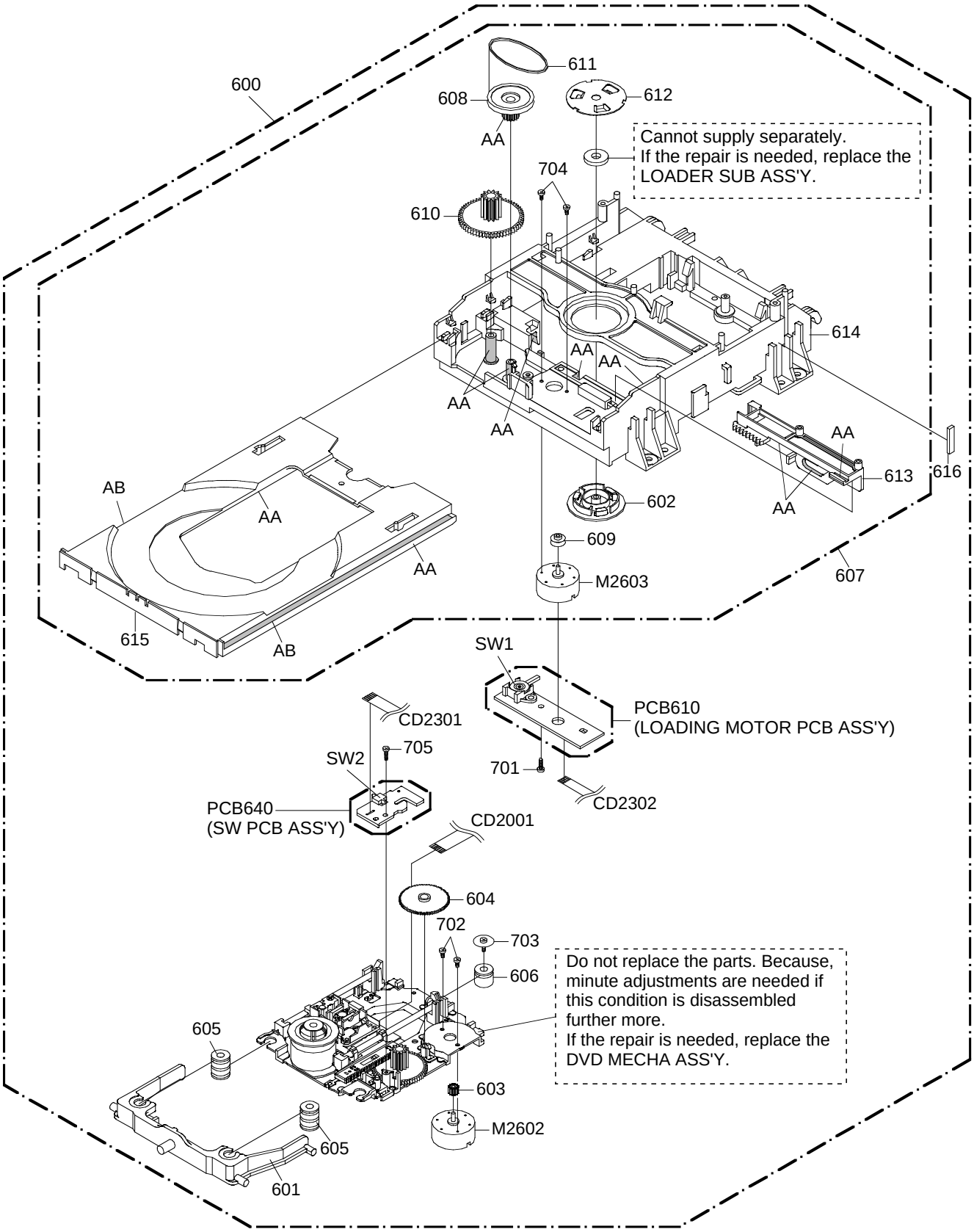
CHASSIS EXPLODED VIEW (BOTTOM VIEW)



CLASS	PART NO.	PART NAME	MARK
GREASE	Y315061000	G-555G	AA
	Y315071000	MG-33	AB
	Y31D011000	FG-84M	AC
	Y315041000	FL-721	AD
	Y315141000	G-313Y	AE

NOTE: Applying positions AA, AB, AC, AD and AE for the grease are displayed for this section. Check if the correct grease is applied for each position.

DVD DECK EXPLODED VIEW



CLASS	PART NO.	PART NAME	MARK
GREASE	Y315061000	G-555G	AA
	Y315121000	SF-112	AB

NOTE: Applying positions AA and AB for the grease are displayed for this section.
Check if the correct grease is applied for each position.

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
101	7A7010032A	FRONT,CABI ASS'Y		
101A	701WPJC393	CABINET,FRONT		
101B	711WPDA628	PLATE,DISPLAY		
101C	712WPJB882	FLAP		
101D	713WPA0193	GLASS,LED-VCR		
101E	713WPA0194	GLASS,LED-DVD		
101F	735WPB0258	BUTTON,FRAME-DVD		
101G	735WPB0259	BUTTON,FRAME-VCR		
101H	743WKA0042	SPRING,FLAP		
101I	800WFAA015	CUSHION,LEG		
102	701WPA0686	HOLDER,DECK		
103	701WPA0751	HOLDER,DECK		
104	702WSA0212	CABINET,TOP		
105	761WPA0261	HOLDER,DVD BR		
106	85OP700038	HOLDER,END SENSOR		
107	702WSA0216	PLATE,BOTTOM		
108	722A08A156	SHEET,RATING		
109	761WPA0321	HOLDER,DVD BL		
110	753WUA0065	SPRING,EARTH		
111	761WSAA025	ANGLE,FRONT		
112	761WPA0262	HOLDER,DECK TOP		
113	752WSA0290	SHIELD,COMPO		
114	8965TS1010	CUSHION		65TS10-10(10x20x25)
115	7230007874	SHEET,JACK		
116	752WUAA001	SHIELD,3PIN		
117	761WPA0296	HOLDER,DISC		
118	800WB00004	FIBER,WASHER		7x3.2xT0.5
119	712WPB0162	PLATE,TRAY-FRONT		
120	723000A698	SHEET,DISPLAY		
121	7235630010	SHEET,DVD		
201	8110226804	SCREW,TAP TITE(P)	BIND	2.6x8
202	8109130B94	SCREW,TAP TITE(B)R	PAN	3x29
203	8109230704	SCREW,TAP TITE(B)R	BIND	3x7
204	8109I30A04	SCREW,TAP TITE(B)	WH7	3x10
205	8109230804	SCREW,TAP TITE(B)	BIND	3x8
206	8109K30601	SCREW,TAP TITE(B)	BIND(3D)	3x6
207	8107130404	SCREW,TAP TITE(S)	PAN	3x4
208	810F130804	SEMS(F)		3x8
209	8107226604	SCREW,TAP TITE(S)	BIND	2.6x6
210	8154D30334	SCREW,TAP TITE(B)	WH8	3x33R
---	791WHA0100	GIFT,SHEET		
---	792WHA0558	PACKAGE,FRONT		
---	792WHAA117	PACKAGE,BACK		
---	793WCDC530	GIFT,BOX		
---	795WCA0674	PAD,FLAT		
---	795WCAA223	PAD TYPE:A		
---	795WCAA224	PAD TYPE:B		
---	A2E5P4X975	INSTRUCTION BOOK KIT		
---	J2E5P421A	INSTRUCTION BOOK		
---	J3J81702C	WARRANTY SHEET		
---	JB5UD200	POLYBAG,INSTRUCTION(RED CAUTION)		

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
300	A2E504X420K	DECK ASSY	A2E504X420K	501	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
				502	83ETW30000	E-RING	3
301	85OA400240	PINCH ROLLER BLOCK (VA)	or	503	8107226404	SCREW,TAP TITE(S) BIND	2.6x4
301	85OA400245	PINCH ROLLER BLOCK VA2		504	8102120604	SCREW,PAN	M2x6
302	85OA500026	AHC ASS'Y		505	8109126604	SCREW,TAP TITE(B) PAN	2.6x6
303	85OP200290	BELT,CAPSTAN (S)		506	810A130404	SCREW/WASHER(A)	M3x4
304	85OP600581	WORM		507	810A126504	SCREW/WASHER(A)	M2.6x5
305	85OP500083	BASE,AC HEAD		508	82Q264713N	POLYSLIDER WASHER	2.6x4.7xT0.13
306	85OP800324	SPRING,AC HEAD		509	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
307	85OA000516	MAIN CHASSIS ASS'Y					
308	85OA200089	CLUTCH ASS'Y		510	8107226604	SCREW,TAP TITE(S) BIND	2.6x6
309	85OA200090	ARM IDLER ASS'Y					
				CD1501	122H071704	CORD JUMPER	2H071704
310	85OA300065	LOADING ARM S UNIT		CD1502	122Y021902	CORD JUMPER	2Y021902
311	85OA300066	LOADING ARM T UNIT		H5001	1523Q91004	HEAD,AUDIO CONTROL	VTR-1X2RPE22-772
312	85OA400223	INCLINED BASE T UINT 3S		H5002	1543Q02014	HEAD (FULL ERASE)	VTR-1X2ERS11-154
313	85OA400232	P5 ARM ASS'Y 2		⚠ M101	1596S98002	MOTOR,LOADING	MDB2B66B
314	85OA400235	TENSION ARM ASS'Y 2		⚠ M2001	1510S98042	CAPSTAN DD UNIT	F2QVB73
315	85OA400231	INCLINED BASE S UNIT		M2003	1589S11020	MICRO MOTOR	I2OAL34
316	85OP800367	SPRING LOCKER		⚠ UN4001	A2D312H500	CYLINDER UNIT ASS'Y	A2D312H500
317	85OP900736	CASS,HOLDER					
318	85OP900748	CASS,SIDE L					
319	85OP900749	CASS,SIDE R					
320	85OP900739	LOCKER,R					
321	85OA900228	LINK UNIT					
322	85OP000496	POST,CASS GUIDE					
323	85OP200316	REEL,S (S)					
324	85OP200317	REEL,T (S)					
325	85OP200308	GEAR,IDLER					
326	85OP200311	GEAR,CLUTCH					
327	85OP200312	GEAR,COUPLING					
328	85OP200313	LEVER,CLUTCH					
329	85OP300194	GEAR,MAIN LOADING					
330	85OP400490	LEVER,TENSION					
331	85OP400492	HOLDER,TENSION					
332	85OP400520	CAP.P4					
333	85OP400542	BAND,TENSION					
334	85OP400533	CONNECT,TENSION					
335	85OP600573	ARM,BRAKE T					
336	85OP600584	BAND,BRAKE T					
337	85OP600577	CAM,PINCH ROLLER					
338	85OP600578	CAM,MAIN					
339	85OP600579	ROD,MAIN					
340	85OP600582	GEAR,JOINT					
341	85OP800322	SPRING,TENSION					
342	85OP800360	SPRING,BRAKE T					
343	85OP800355	SPRING,COUPLING					
344	85OP800356	SPRING,RING					
345	85OP900743	LEVER,LINK					
346	85OP900744	LEVER,FLAP					
347	85OP900745	CASS,OPENER					
348	85OP700035	REFLECTOR,LED					
349	85OP900746	BRACKET,TOP 3V					
350	85OP400549	HOLDER,CAPSTAN					

DVD DECK REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
⚠ 600	A2E504X650	DVD MECHA ASS'Y	A2E504X650
601	92P100109A	HOLDER,TRAVERSE	
602	92P100094A	CLAMPER	
603	92P100088A	GEAR,MOTOR	
604	92P100108A	GEAR,MIDDLE	
605	92P200013A	INSULATOR(F)	
606	92P200014A	INSULATOR(R)	
607	92SBB0020A	LOADER SUB ASS'Y	
608	92P100095A	GEAR,PULLEY	
609	92P100097A	PULLEY,MOTOR	
610	92P100096A	GEAR,MAIN	
611	92P200012A	BELT,LOADING	
612	92P000014A	PLATE,CLAMPER	
613	92P100093A	RACK,LOADING	
614	92P100091A	FRAME,MAIN	
615	92P100100A	TRAY	
616	800WFAA008	CUSHION C	
701	811022680U	SCREW,TAP TITE(P) BIND	2.6x8
702	814011723U	SCREW,PAN	M1.7x2.3 P3
703	816112080U	SEMS.TAP TITE(P) PAN	W10 2x8
704	814011730U	SCREW,PAN	M1.7x3 P3
705	811022080U	SCREW,TAP TITE(P) BIND	2x8
CD2001	122H0O1901	CORD JUMPER	2H0O1901
CD2301	122H062102	CORD JUMPER	2H062102
CD2302	122H052601	CORD JUMPER	2H052601
⚠ M2602	1515S98002	FEED MOTOR	BCZ3B03
M2603	1596S18002	LOADING MOTOR	BCZ3B52
PCB610	A2D801X610	PCB ASS'Y	VEDA47A
PCB640	A2E220T640	PCB ASS'Y	DED012A
SW1	0515S32002	SWITCH	SSS-13-2
SW2	0500101037	PUSH SWITCH	ESE22MH24

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		RESISTORS	
⚠ R501	R0G3K2335K	RC	3.3M OHM 1/2W
⚠ R502	R3X181010J	R,METAL OXIDE	1 OHM 1W
⚠ R503	R002T2155J	RC	1.5M OHM 1/2W
⚠ R504	R002T2561J	RC	560 OHM 1/2W
⚠ R512	R3X181683J	R,METAL OXIDE	68K OHM 1W
⚠ R516	R63581R22J	R,FUSE	0.22 OHM 1W
⚠ R517	R002T2102J	RC	1K OHM 1/2W
		CAPACITORS	
⚠ C501	E02LF2222M	CE	2200 UF 16V
⚠ C502	P2122B224M	CMP	0.22 UF 275V ECQUL
⚠ C505	E02LU2101M	CE	100 UF 16V
⚠ C511	E62QFC470M	CE	47 UF 200V
C513	C03L0R7H2K	CC	220 PF 2KV R
⚠ C514	E02LU2101M	CE	100 UF 16V
⚠ C515	C0J0B0514K	CC	0.01 UF 500V B
⚠ C516	CC3LE0MH3M	CC	0.0022UF 250V
⚠ C518	E61FF0222D	CE	2200 UF 6.3V
⚠ C519	E02LF1222M	CE	2200 UF 10V
⚠ C521	E02LU2101M	CE	100 UF 16V
⚠ C522	E02LU5220M	CE	22 UF 50V
C525	C03L0R7U2K	CC	680 PF 2KV R or
	C0PLRR7U2K	CC	680 PF 2KV R
⚠ C526	CC3LE0MH3M	CC	0.0022UF 250V
⚠ C540	E62QFC470M	CE	47 UF 200V
		DIODES	
D501	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D502	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D503	D2WXN40050	DIODE SILICON	1N4005-EIC
D504	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D505	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D506	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D507	D23TGP15J0	DIODE SILICON	RGP15J-G23
D508	D1VT001330	DIODE,SILICON	1SS133T-77
D509	D2WXGP10J0	DIODE RECTIFIER	RGP10J-EIC
⚠ D510	D97U02201B	DIODE ZENER	MTZJ22B T-77
⚠ D511	D2LKB340L0	DIODE SCHOTTKY	SB340L-6737
D512	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D513	D2WXN40050	DIODE SILICON	1N4005-EIC
D514	D97U01201B	DIODE,ZENER	MTZJ12B T-77
⚠ D515	D28T21DQN4	DIODE SCHOTTKY	21DQ04N-TA2B1
D516	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D518	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D519	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
⚠ D520	D2WXN40050	DIODE SILICON	1N4005-EIC
⚠ D522	D28TELS6N6	DIODE RECTIFER	10ELS6N-TA1B2
⚠ D523	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D524	D1VT001330	DIODE,SILICON	1SS133T-77
D526	D97U03R31B	DIODE,ZENER	MTZJ3.3B T-77
⚠ D527	D2WXN40050	DIODE SILICON	1N4005-EIC
D528	D1VT001330	DIODE,SILICON	1SS133T-77
D651	0021E2Q140	LED	LTL-1CHEE-002A
D656	D2WXN40050	DIODE SILICON	1N4005-EIC
D685	0021E2Q140	LED	LTL-1CHEE-002A
D2601	DDARDS1200	DIODE SILICON	KDS120RTK
D2602	DE5RB2R21X	DIODE ZENER	02DZ2.2-X(TH3ORION
D3001	0010E00330	INFRARED LED	LTE-3271T-012A-O
D3002	D1VT001330	DIODE,SILICON	1SS133T-77
D3007	D1VT001330	DIODE,SILICON	1SS133T-77
D3009	D1VT001330	DIODE,SILICON	1SS133T-77
D8004	D1VT001330	DIODE,SILICON	1SS133T-77
D8005	D1VT001330	DIODE,SILICON	1SS133T-77
D8006	D1VT001330	DIODE,SILICON	1SS133T-77
D8111	DDDRL41480	DIODE SILICON	MCL4148
D8112	DDDRL41480	DIODE SILICON	MCL4148
		ICS	
IC101	I03F3206M0	IC	LA71206M-MPB
⚠ IC501	I1KJ9A431A	IC	KIA431A-AT
⚠ IC502	I1KA98R09A	IC	KIA78R09API
⚠ IC503	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
IC701	I03F670BM0	IC	LA72670BM-L-MPB-E
IC2301	I03F065650	IC	LA6565-TE-L-E
IC2601	ICQK067080	IC	ZR36708TQC
IC3001	I54F50147A	IC	OEC0147A
IC3003	I9UF032310	IC	PST3231NR
IC3099	A2E5P4L015	INIT DATA	S-24CS02AFJ-TB-G
IC4001	ICQK06762V	IC	ZR36762PQCG_V
IC4002	I5HJ002AF0	IC	S-24CS02AFJ-TB-G

REF. NO.	PART NO.	DESCRIPTION	
		ICS	
IC4003	I0BF97KWM0	IC	SI-3007KWM-TL
IC4005	ICLJ0610EX	IC	HY57V161610ETP-7
IC4007	ICMJ0800A8	IC	SST39VF800A-70-4C-EK-D
IC4008	ICLJ0610EX	IC	HY57V161610ETP-7
IC8001	I0QJ045800	IC	NJM4580M(TE1)
IC8005	I0UF015010	IC	MM1501XNRE
IC8102	I17F017530	IC	PCM1753DBQR
		TRANSISTORS	
Q101	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q102	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q103	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q104	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q105	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q107	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q109	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q301	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
⚠ Q501	T25F035630	FET	2SK3563(ORION_Q)
⚠ Q502	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
⚠ Q503	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
⚠ Q504	TAAT012714	TRANSISTOR, SILICON	KTA1271_Y-AT
⚠ Q505	TD3T012070	TRANSISTOR,SILICON	2SD1207(S,T)-AE
Q506	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
⚠ Q507	TCAT032034	TRANSISTOR, SILICON	KTC3203_Y-AT
Q509	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
⚠ Q510	TD3T012070	TRANSISTOR,SILICON	2SD1207(S,T)-AE
Q513	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q514	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q651	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q652	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q653	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q654	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q655	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q656	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q657	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q658	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q659	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q660	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q661	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q662	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q663	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q664	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q665	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q666	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q2601	T67J1036K0	TRANSISTOR SILICON	2SA1036KT146
Q2602	T67J048TL0	TRANSISTOR SILICON	2SA2048TL
Q2603	T27T030180	FET	2SK3018T106
Q2604	T27T030180	FET	2SK3018T106
Q2605	T27T030180	FET	2SK3018T106
Q2607	T6YJ1037K0	TRANSISTOR,SILICON	2SA1037AKT146R,S
Q2608	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q3002	0002700690	PHOTO COUPLER	RPI-303
Q3003	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q3004	0002700680	PHOTO COUPLER	RPI-352C40N
Q3005	0002700680	PHOTO COUPLER	RPI-352C40N
Q3006	0000M00390	PHOTO TRANSISTOR	ST-304L
Q3007	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q3008	0000M00390	PHOTO TRANSISTOR	ST-304L
Q8001	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q8002	TNYJD05001	COMPOUND TRANSISTOR	DTC144EKAT146
Q8003	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q8004	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q8005	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q8006	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q8007	TPYJC05001	COMPOUND TRANSISTOR	DTA124EKAT146
Q8008	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q8009	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
Q8010	TPYJA05001	COMPOUND TRANSISTOR	DTA143EKAT146
Q8011	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q8012	T8YJ2412K0	TRANSISTOR SILICON	2SC2412KT146 R,S
		COILS &TRANSFORMER	
L101	031626010R	COIL,BIAS OSC	1626010
L102	02167F101J	COIL	100 UH
L301	02167F220J	COIL	22 UH
⚠ L501	029X000117	COIL,LINE FILTER	SS11VL-05230
L505	02167F220J	COIL	22 UH
L506	021W7A220K	COIL	22 UH
L701	021LA6220J	COIL	22 UH

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		COILS &TRANSFORMER	
L702	021LA6220J	COIL	22 UH
L703	02167F220J	COIL	22 UH
L704	02167F220J	COIL	22 UH
L705	02167F220J	COIL	22 UH
L3002	021W7A220K	COIL	22 UH
L3003	021LA6120J	COIL	12 UH
L4001	02167F2R2J	COIL	2.2 UH
L8001	021LA6R33M	COIL	0.33 UH
L8002	021LA6R33M	COIL	0.33 UH
L8102	02167F1R0K	COIL	1 UH
L8103	02167F1R0K	COIL	1 UH
L8104	02167F1R0K	COIL	1 UH
L8105	02167F1R0K	COIL	1 UH
⚠ T501	0481291244	TRANSFORMER,SWITCHING	81291244
		JACKS	
J8001	060J411031	RCA JACK	MSP-213V1-432_NI_LF
J8003	060J401099	RCA JACK	MSP-281V42-B
J8004	060J401098	RCA JACK	MSP-281V40-B
J8005	060J421039	RCA JACK	MSP-281V31-A
J8006	060J411033	RCA JACK	MSP-213V1-732_NI_LF
J8007	060J411032	RCA JACK	MSP-213V1-652_NI_LF
J8008	063D700008	JACK	MDC-070V-B_LF
		SWITCHES	
SW651	0504101T34	SWITCH,TACT	EVQ21505R
SW652	0504101T34	SWITCH,TACT	EVQ21505R
SW653	0504101T34	SWITCH,TACT	EVQ21505R
SW654	0504101T34	SWITCH,TACT	EVQ21505R
SW655	0504101T34	SWITCH,TACT	EVQ21505R
SW685	0504R01T38	SWITCH TACT	EVQ11L05R
SW686	0504R01T38	SWITCH TACT	EVQ11L05R
SW687	0504R01T38	SWITCH TACT	EVQ11L05R
SW688	0504R01T38	SWITCH TACT	EVQ11L05R
SW689	0504R01T38	SWITCH TACT	EVQ11L05R
SW690	0504R01T38	SWITCH TACT	EVQ11L05R
SW3001	0508S11001	SWITCH (LEAF)	LSA-1144EAU
SW8001	0510Y24001	SWITCH SLIDE	SK42H01G9A
		P.C.BOARD ASSEMBLIES	
PCB010	A2E5P4L010	PCB ASS'Y	VMD335B
PCB130	A2E5P4L130	PCB ASS'Y	VMD351A
PCB270	A2E5P4L270	PCB ASS'Y	VEDA46B
		MISCELLANEOUS	
B501	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B2601	0246C51024	CORE,BEADS	MMZ1608R102CT
B2602	0246C51024	CORE,BEADS	MMZ1608R102CT
B2603	0246C51024	CORE,BEADS	MMZ1608R102CT
B2604	0246C51024	CORE,BEADS	MMZ1608R102CT
B2605	0246C51024	CORE,BEADS	MMZ1608R102CT
B4001	0246C51024	CORE,BEADS	MMZ1608R102CT
B4002	0246C51024	CORE,BEADS	MMZ1608R102CT
B4003	0246C51024	CORE,BEADS	MMZ1608R102CT
B4004	0246C51024	CORE,BEADS	MMZ1608R102CT
B4005	0246C51024	CORE,BEADS	MMZ1608R102CT
B4006	0246C51024	CORE,BEADS	MMZ1608R102CT
B4007	0246C51024	CORE,BEADS	MMZ1608R102CT
B4008	0246C51024	CORE,BEADS	MMZ1608R102CT
B4010	0246C51024	CORE,BEADS	MMZ1608R102CT
B8001	024HC31022	CORE,BEADS	FCM2012H-102T04
B8002	024HC31022	CORE,BEADS	FCM2012H-102T04
B8003	024HC31022	CORE,BEADS	FCM2012H-102T04
B8103	0246C51024	CORE,BEADS	MMZ1608R102CT
CD102	122F041508	CORD JUMPER	2F041508
⚠ CD501	1209614920	CORD AC BUSH	9614920
CD681	122H051202	CORD JUMPER	2H051202
CP101	0697290620	CONNECTOR PCB SIDE	TOC-C09X-A1
CP102	069J740599	CONNECTOR PCB SIDE	IMSA-9604S-04C
CP103	067U002019	WIRE HOLDER	B2013H02-2P
CP501	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
⚠ CP502	069S320419	CONNECTOR PCB SIDE	A3963WV2-3PD
CP651	069J750589	CONNECTOR PCB SIDE	IMSA-9604S-05F
CP681	069J750589	CONNECTOR PCB SIDE	IMSA-9604S-05F
⚠ CD4002	06CU2B1101	CORD CONNECTOR	CU2B1101
CD6002	06CPL02006	CABLE	CPL02006
CD6003	06CPBA2003	CORD,RCA PIN	TD-020301-3
CD8001	122F0E1001	CORD JUMPER	2F0E1001
CP2601	069GYOT119	CONNECTOR PCB SIDE	09-5000-024-001-001
CP2602	069EV53010	CONNECTOR PCB SIDE	00_6232_005_006_800
CP2603	069EV63010	CONNECTOR PCB SIDE	00_6232_006_006_800

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
⚠ CP3001	06972C0010	CONNECTOR PCB SIDE	TMC-J12P-B2
CP8001	069J7E0599	CONNECTOR PCB SIDE	IMSA-9604S-14C
CP8101	069J7E0589	CONNECTOR PCB SIDE	IMSA-9604S-14F
⚠ F501	081PC2R505	FUSE	51MS025L
FH501	06710T0009	HOLDER,FUSE	EYF-52BCY
FH502	06710T0009	HOLDER,FUSE	EYF-52BCY
OS651	077Q037009	REMOTE RECEIVER	PIC-37043LO-H
OS8001	07AQ000009	OPTICAL DEVICE	OFTG038101
TM601	076R0JN01A	TRANSMITTER	R56-0532
⚠ TU301	0162300042	RF UNIT	115-V-H035ARE
V651	0040H54010	LED DISPLAY	CO2D0M3-A
X101	100DT3R528	CRYSTAL	HC-49/U
X3001	100GT01006	CRYSTAL	B10000C001
X3002	100DA32R01	CRYSTAL	DT-26
X4001	100BT02701	CRYSTAL	HC-49U/S

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

SPEC.NO.	M2E5-P4L
O/R NO.	K4X2311